THE IRON TRADE REVIEW

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Production Increases and Price Cutting Continues

Early Days of August Give Reason for Hoping for Better Conditions—Scrap Furnishes Excitement in Eastern Territory

In mill operations and sales of finished products, July made a better record than June. The opening days of this month give promise of still further improvement. There is, however, continued irregularity in prices, especially of plates, sheets and bars.

Plant Activities

Steel works operations of the various subsidiaries of the United States Steel Corporation are scheduled this week to reach 76 per cent, which will represent the highest rate of ingot production during the present year. During the past week, the Steel Corporation was active at 72 per cent of ingot capacity. The additional steel making equipment to go into commission this week is being scattered throughout the different classes of plants. Blast furnace production is fractionally less this week than last, through the shifting of stacks, but is still better than 65 per cent. One Schoenberger and one Donora furnace in the Pittsburg district have gone out and one of the Duquesne furnaces has been ordered in this week. The pig iron stocks of the Steel Corporation were reduced 23,000 tons last week. The Cambria Steel Co. is operating all of its blast furnace and open-hearth capacity.

Pig Iron

Efforts of some of the southern furnaces to advance quotations on pig iron to the basis of $10.25 to $10.50, Birmingham, for No. 2, have resulted in checking the buying, and $10 iron is still available. In the east, an inquiry for 6,000 tons of basic is pending, and will probably go to Virginia makers. Three inquiries for malleable in the Chicago district aggregate 20,000 tons. The leading cast iron pipe company is reported to have purchased a considerable tonnage in the south. A central Pennsylvania consumer is reported to have closed for a round tonnage of foundry and forge iron, but details of the transactions are not available. Basic seems to be firm at $13, valley.

Shapes and Plates

A large amount of structural material will be required for projects which, it is expected, will soon be under way in western Pennsylvania. The new Field Columbian Museum, Chicago, will require 8,000 tons. The McClintic-Marshall Construction Co. was low bidder on Panama Canal work, which will require 3,360 tons of shapes. The Riter-Conley Mfg. Co. was awarded the contract for a natural gas holder, which will require 5,000 tons of plates. The Cambria Steel Co. has taken a contract for the Dupont hotel, Wilmington, Del., 1,500 tons. The American Bridge Co. has contracts for water works construction in Tacoma, 3,200 tons; West Philadelphia high school, 1,000 tons, and for government tugs, 1,500 to 2,000 tons. Bethlehem sections will be used in the New York telephone building, to be erected by Eitlitz & Ross, New York. The Pennsylvania Engineering Works, New Castle, Pa., has been awarded the contract for two blast furnaces by the Minnesota Steel Co., Duluth.

Iron Ore

There is slight increase in interest on the part of furnace operators in Lake Superior ores, and a few sales have been made, but the market still drags, and the outlook is that the season on the lakes will close at an early date. Fair sales of eastern local ores are being made.

Railroad Buying

Inquiries for about 10,000 cars are pending at Chicago, where the orders from railroads have been a very material help to the mills during the past month. The general contract for the Kansas City Union station, which will require 8,000 to 10,000 tons of structural material, will probably be awarded to the George A. Fuller Co. The New Orleans, Nashville & Chicago railroad has ordered 5,500 tons of open-hearth rails from the Tennessee company, which also reports 7,000 tons scattering. The Illinois Steel Co. has booked 13,700 tons in small lots.

Coke

With the resumption of blast furnaces, consumption of coke has increased to a considerable extent. Prices are firmer, and there has been a very fair amount of buying. A blast furnace company has taken 12,000 tons of Connellsville furnace coke for August shipment at $1.50, ovens, and a northern Ohio furnace requiring from 6,000 to 7,000 tons a month has purchased about 35,000 tons at about $1.60, ovens.

Scrap

There has been considerable activity and some advance in prices in the scrap market in Philadelphia and New York. Speculators are active. Consumers are not making extensive purchases. In Chicago the market is quiet, and it is firmer in Pittsburg. The Pennsylvania Railroad Co. has asked for bids on 15,000 tons of old material, including 5,000 tons of heavy melting steel, on which bids will be closed Aug. 8.

WORLD'S IRON MARKETS

PITTSBURG

Increase in Production, but Price Cutting Continues.

Office of THE IRON TRADE REVIEW,
2148-49 Oilver Bldg., Aug. 1.

There has been a further expansion in steel mill operations in the western Pennsylvania territory and the month of August opens with prospects of greater activity, but little encouragement is to be found in the price situation. Practically all companies in this territory report an increase in orders and production in July, and, while the improvement for the month is not uniform, the trade generally is optimistic and indications are that there will be a still further increase in steel mill and blast furnace operations in the near future. One or two companies are operating their steel mills practically full, while others are not doing better than 65 to 70 per cent of capacity. There has been a decided gain in production of pig iron by non-merchant furnaces. The Carnegie Steel Co. is operating 38 of its blast furnaces; the Cambria Steel Co. is running all of its eight stacks, and the Republic Iron & Steel Co. has nine of its 10 furnaces in blast. Basic pig iron is slightly firmer and it is doubtful whether $13, valley, could be shaded. Consumption of scrap is much heavier and moderately heavy buying is noted. Price concessions are still being offered regularly by some mills on steel bars, plates, sheets and wire products, although several manufacturers of wire and nails have withdrawn low quotations. The Riter-Conley Mfg. Co. has received a contract for a large gas holder, which will require 5,000 tons of plates. The McClintic-Marshall Construction Co., Pittsburg, is the low bidder on Panama canal work aggregating $340,000 and involving 3,360 tons of steel. This company has also taken a contract for the Southern Pacific railroad station at Oakland, Cal., which will require 200 tons of steel. James L. Stuart, Pittsburg, has the contract for erecting the 12-story Statler hotel, Cleveland, for which the American Bridge Co. will fabricate the steel, and the Henry Shenk Co. has the contract for an eight-story hotel building at Erie, but awards for the structural steel have not been made. Bids will close Aug. 11 on the Point bridge, Pittsburg, which will require from 6,000 to 9,000 tons of steel. A large amount of furnace coke has been sold during the week, and sellers are realizing higher prices on prompt furnace coke. We note sales of about 35,000 tons of furnace coke to an Ohio furnace interest for delivery over the remainder of the year at $1.60, ovens; 12,000 tons of furnace coke for August shipment at $1.50, ovens, and sales by a local dealer aggregating 60,000 tons of foundry coke, including 30,000 tons to a radiator interest.

Pig Iron.—Shipments of pig iron against contracts previously made are heavier and there has been a decided gain in production by non-merchant furnaces. Stocks in the hands of merchant operators show a slight decline. Perhaps the most encouraging feature of the local situation is the fact that the extremely low quotations on basic iron for early shipment have disappeared and valley furnaces are now quoting $13, valley, as the minimum. However, this price, no doubt, could be done on basic for forward delivery. A local interest is understood to have taken 1,000 tons of basic at less than $13, valley, but the iron does not carry the full valley freight rate. It is generally conceded that most consumers of this grade are covered for early needs. Some basic has been picked up by middlemen who are holding for higher prices. A central Pennsylvania consumer is reported to have closed for a round tonnage of foundry and forge iron—estimated at from 25,000 to 30,000 tons—but the iron will come from a nearby furnace and the transaction has little bearing upon market conditions. A Pittsburg company has purchased 300 tons of Bessemer for August shipment at $15, valley, and other sales of slightly larger amounts are reported at this figure, which represents the monthly average price on Bessemer for July, as announced from one source. While the demand for foundry iron is not heavy, one seller reports sales aggregating 4,500 tons and there has been enough trading to show that the market is firm at $13.50, valley, as the minimum on No. 2 foundry. The Westinghouse Electric & Mfg. Co. likely will close tomorrow or Thursday for 12,500 tons of foundry grades for its Cleveland and Northside, Pittsburg, plants. We quote the market as follows:

(Prompt Shipment.)

Bessemer, valley	$15.00
Bessemer, Pittsburg	15.90
Basic, valley	13.00
Basic, Pittsburg	13.90
No. 2 foundry, Pittsburg	14.40
Gray forge, Pittsburg	13.90
Malleable, Pittsburg	14.15

(Third Quarter.)

Bessemer, valley	$15.00
Bessemer, Pittsburg	15.90
Basic, valley	13.00
Basic, Pittsburg	13.90
No. 2 foundry, Pittsburg	14.40
Gray forge, Pittsburg	13.90
Malleable, Pittsburg	14.15

Ferro-Alloys.—The market on ferromanganese has not been tested since the general advance to $37 a ton was announced, no important inquiries or sales having been reported during the week. Demand for 50 per cent ferrosilicon is light, but dealers are quoting $53, Pittsburg, as the minimum.

We quote ferro-manganese at $37, Baltimore, for prompt and forward delivery. The freight rate from Baltimore to Pittsburg is $1.95 per ton.

Fifty per cent ferro-silicon is quoted at $53, Pittsburg, for prompt and forward delivery; 12 per cent, $25; 11 per cent, $24; 10 per cent, $23, f. o. b. Jisco and Ashland furnaces. The freight rate to Pittsburg is $1.90. The foreign grades are held at $1 or more a ton over domestic prices.

Plates.—Despite the fact that buying of cars by the railroads in July was very light, manufacturers of plates report that the tonnage booked during the month was only slightly below that of June. Competition for the new business appearing is very keen and 1.35c, Pittsburg, is still being shaded by some mills. Reports of price concessions on plates have brought out more general inquiry and moderately heavy tonnage is involved in pending inquiries. The Riter-Conley Mfg. Co., Pittsburg, has been awarded a contract by the Allegheny Heating Co., a subsidiary of the Philadelphia Co., Pittsburg, for a large natural gas holder to be erected on the Northside, Pittsburg, which will

require 5,000 tons of plates and about 200 tons of rivets. The contract for the plain material has not yet been awarded, but will go to a local mill. Bids were opened today for the proposed riveted pipe line for water service in Brooklyn, which will require about 4,000 tons of plates, etc. It is expected that this business will also go to a local mill. The contract for about 10,000 tons of plates, etc., for two United States colliers has not been placed. It is expected that definite action will be taken within another week on some of the numerous inquiries for freight cars noted recently. We quote the market as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches, 1.30c to 1.35c. Extras are as follows, per 100 pounds: Boiler and flange steel plates, 0.10c; A. B. M. and ordinary firebox steel plates, 0.20c; still bottom steel, 0.20c; marine steel, 0.40c; locomotive firebox steel, 0.50c; all sketches excepting straight taper plates varying not more than 4 inches in width at ends, narrowest end being not less than 30 inches, 0.10c; circles, 0.20c. Plates in widths over 100 inches up to 110 inches, 0.05c; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 130 inches, 0.50c; over 130 inches, 1c. Gages under ¼ inch to and including 3-16 inch plate on thin edge, 0.10c; under 3-16 and including No. 9, 0.25c. Five cents extra for less than carloads. Terms net cash in 30 days.

Sheets.—Shipments of sheets during the month of July were about equal to those of June, which was the best month this year for some of the local companies. Owing to the exceptionally heavy bookings in June, there was a noticeable decline in orders during July and there is considerable irregularity in prices. While several of the larger companies are maintaining prices, concessions of at least $1 a ton are being offered by a number of manufacturers. Mill operations today are heavier than for several months. The American Sheet & Tin Plate Co. is operating its sheet and tin mills at about 75 per cent of capacity and one or two independent mills are operating full time. We quote the market as follows, with $1 a ton added as the delivered price in the Pittsburg district:

Blue annealed sheets No. 10 gage 1.45c to 1.50c; black annealed sheets No. 28 gage, 1.95c to 2c; galvanized sheets No. 28 gage, 2.95c to 3c; painted roofing sheets, 1.35c to 1.40c per square for No. 28 gage, 2½-inch corrugation; galvanized roofing sheets, 2.50c to 2.55c per square for No. 28 gage, 2½-inch corrugation f. o. b. Pittsburg.

Tin Plate.—New demand for tin plate is slightly heavier, although the total tonnage booked in July shows only a slight gain over the preceding month. Specifications are fairly satisfactory and tin mills are operating on a more satisfactory schedule than last month, two or three of the larger independent plants having operated to capacity during the last three weeks in July. Prices are fairly firm. We quote the market as follows:

Coke tin plate, 10-pound basis, 14 x 20, $3.70 f. o. b. mill, Pittsburg district.

Rails and Track Material. — New business in steel rails booked by mills in this territory in July shows a decline as compared with June and there was also a noticeable falling off in specifications. There has been more inquiry for steel rails during the past week and indications point to greater activity in the way of new business and specifications during the months of August and September. Rail mills in this territory are operating on about the same basis as last week. The past week has been a fairly satisfactory one as regards bookings of light rails, although individual orders were small. There has been a fair demand for railroad spikes and track supplies. We quote the market as follows, the base price on open-hearth rails being 1.34c per pound at the mill:

Fifty-pound and heavier, 1.25c per pound; carloads and less than 500 tons, 1.34c per pound; light rails on base weight of 40 to 45 pounds, 1.16c, the schedule on the other weights being irregular and subject to negotiations; angle splice bars for standard sections, 1.50c, Pittsburg; track bolts, 2.25c, Pittsburg.

RAILROAD SPIKES.

4½, 5 and 5½ x ⅝	$1.50 to $1.55
3, 3½, 4, 4½ and 5 x ½	.10
3½, 4 and 4½ x ⅞	.20
3, 3½, 4 and 4½ x ⅜	.30
2½ x ⅜	.40
2½, 3 and 3½ x ⅞	.60
2 x ⅞	.80

Steel.—The leading interest and the larger independent steel companies report an increase in mill orders for billets and sheet bars in July as compared with June, and steel mills are now operating on a more satisfactory schedule than for several months. The Ohio works of the Carnegie Steel Co. and the steel mills of the Republic Iron & Steel Co. are operating to capacity, and the Cambria Steel Co., Johnstown, has all of its 25 open-hearth furnaces in service. Indications are that mill orders for billets and sheet bars in August will exceed those of June and July and will be equal to those of March, which was the best month so far this year. New orders for billets and sheet bars are light as most users are covered by contract. Prices are very firm. We quote the market as follows:

Bessemer 4 x 4 billets with 0.25 carbon and less are quoted at $21, with the usual extras for size and analysis, and open-hearth rolling billets, $21. Bessemer sheet and tin bars are quoted at $22, and open-hearth sheet bars are quoted at $22, f. o. b. Pittsburg or Youngstown, with full freight to destination added. Forging billets are quoted at $26, Pittsburg.

Hoops and Bands.—New orders and specifications for hoops continue satisfactory and no sales have been reported below 1.40c, Pittsburg. Price concessions are still being made on bands and new business is light. We quote the market as follows:

Hoops in carload lots, 1.40c, Pittsburg; in less than carload lots, 1.50c; bands, 1.20c to 1.25c base, with net extras, as per standard steel.

Merchant Bars.—Practically all manufacturers of steel bars in this territory report a larger volume of business in July than for the preceding month. While a number of contracts were made for delivery over a period of 12 months, there has been a fair amount of business booked for prompt delivery and there has been considerable shading of prices. One of the largest manufacturers of steel bars in this territory reports a larger volume of business in July than for any single month this year. Practically all steel bar mills are running from 85 to 100 per cent of capacity. Some of the larger companies are understood to be quoting 1.25c, Pittsburg, as the minimum, but this price has been shaded at least $1 a ton and it is reported that 1.15c, Pittsburg, has been done on particularly desirable specifications. Demand for bar iron continues light and prices are only fairly firm. Specifications against contracts for shafting are fair, but new business is light. We quote the market as follows:

Common iron bars, 1.30c, Pittsburg; Bessemer and open-hearth steel bars, 1.20c to 1.25c; plow and cultivator, 1.25c; channels, angles, zees, tees, under 3-inch, 1.35c, all f. o. b. mill. The following differentials are maintained on steel. Less than 2,000 pounds of a size, 0.35c advance. Cold rolled and ground shafting, 60 per cent off in carloads and 55 per cent in less than carloads, delivered in base territory.

Muck Bar.—An eastern Ohio consumer is understood to have purchased from 500 to 1,000 tons of muck bar for early shipment on a basis of $28.50, Pittsburg. We quote the best grades of muck bar nominally at from $28.50 to $29, Pittsburg.

Structural.—Demand for structural material continues heavy and indications are that a large portion of the proposed new construction in the western Pennsylvania territory, which has been held up, will be started in the near future. The McClintic-Marshall Construction Co., Pittsburg, is the low bidder on the construction of spillway gates, cais-

sons and foot bridges for Panama canal work aggregating about $340,000, and which will require 3,360 tons of structural steel. It is expected that the contract will be officially awarded within a few days. This company has also received a contract for the Southern Pacific railroad station at Oakland, Cal., involving about 200 tons of steel. James L. Stuart, Pittsburg, has been awarded a contract to erect the proposed new 12-story Statler hotel, Cleveland. The contract for the structural steel was placed about a month ago. Director Joseph G. Armstrong, of the department of public works, Pittsburg, will receive bids until Aug. 11 for the new bridge to span the Allegheny river at Pittsburg, which will require from 6,000 to 9,000 tons of steel. The general contract for the eight-story hotel building to be erected at Erie, Pa., has been awarded to the Henry Shenk Co., Erie. The contract for the steel has not yet been awarded. Bids have closed for the proposed new Diamond street theater, Pittsburg, which will require about 400 tons of steel, but the contract has not yet been awarded. Prices appear to be firm in this territory. We quote the market as follows:

Beams and channels, 15 inches and under, 1.35c; over 15 inches, 1.45c; zees, 1.35c; tees, 1.40c; angles, from 3 to 6 inches, 1.35c; over 6 inches, 1.45c; universal and sheared plates, 6¼ inches wide and wider, 1.35c.

Merchant Pipe.—There has been a fair run of orders for line pipe during the past two weeks and this branch of the steel trade is showing more activity, although there is some irregularity in prices. In addition to the awards noted last week, an order has been placed with a local mill for 40 miles of 6-inch steel pipe for western shipment. A gas interest in this section has placed additional orders aggregating 30 miles of from 3 to 10-inch steel pipe and a western company has placed an order with a local mill for 2 miles of 10-inch steel pipe. There is a fair demand for merchant iron and steel pipe and prospects for the remainder of the year are more promising. We quote the following discounts in carload lots, subject to the usual preferential discount to the larger buyers, merchant pipe, where specified, being offered in from ⅛ to 6 inches:

Iron and Steel Pipe Basing Prices.

	Steel.		Iron.	
	Butt weld.			
	Black.	Galv.	Black.	Galv.
⅜, ¼, ⅜ inch.....	72	58	68	54
½ inch	75	63	71	59
¾ to 1½ inch.....	79	69	75	65
2 to 3 inches	80	70	76	66
	Lap weld.			
2 inches	76	66	72	62
2½ to 4 inches	78	68	74	64
4½ to 6 inches.....	77	67	73	63
7 to 12 inches.....	75	59	71	55

EXTRA STRONG, PLAIN ENDS.

		Butt weld.		
⅜, ¼, ⅜ inch	69	59	65	55
½ inch	74	68	70	64
¾ to 1½ inch	78	72	74	68
2 to 3 inches.....	79	73	75	69

EXTRA STRONG, PLAIN ENDS.

		Lap weld.		
2 inches	75	69	71	65
2½ to 4 inches.....	77	71	73	67
4½ to 6 inches.....	76	70	72	66
7 to 8 inches.....	69	59	65	55
9 to 12 inches.....	64	54	60	50

DOUBLE EXTRA STRONG, PLAIN ENDS.

		Butt weld.		
½ inch	64	58	60	54
¾ to 1½ inch.....	67	61	63	57
2 to 3 inches	69	63	65	59

DOUBLE EXTRA STRONG, PLAIN ENDS.

		Lap weld.		
2 inches	65	59	61	55
2½ to 4 inches.....	67	61	63	57
4½ to 6 inches.....	66	60	62	56
7 to 8 inches	59	49	55	45

Plugged and reamed pipe is furnished at 2 points higher price, either butt or lap weld.

Boiler Tubes.—This market continues unsatisfactory as regards new business and specifications and there is considerable irregularity in prices. We quote the following official discounts on steel boiler tubes in carload lots to jobbers:

1¾ to 2¼ inch.....	65
2½ inch	67½
2¾ to 3¼ inch	70
3½ to 4½ inch.....	72½
5 and 6 inch	65
7 to 13 inch	62½

To destination east of the Mississippi river will be sold at delivered discount for carloads lowered by 2 points, for lengths 22 feet and under; longer lengths, f. o. b. Pittsburg. Usual extras to jobbers and boiler manufacturers.

Wire Products.—Concessions of $1 a ton on wire and nails offered recently by a number of mills, following a general reduction in prices of $2 a ton on June 20, have stimulated buying somewhat and some manufacturers report a slight increase in bookings for July. It is understood, however, that practically all mills have withdrawn the extremely low quotations and are now quoting $1.70, Pittsburg, as the minimum on wire nails, and $1.50, Pittsburg, on plain wire. We quote the market as follows:

Wire nails, jobbers' carload lots, $1.70; retailers' carload lots, $1.75; cut nails (western makers), jobbers' carload lots, $1.60; painted barb wire, jobbers' carload lots, $1.70; retailers' carload lots, $1.80, with 30c for galvanizing; plain wire to jobbers in carloads, $1.50, and to dealers, in carloads, $1.55; polished staples, $1.70; galvanized staples, $2.

Wire Rods.—New demand for wire rods is only fair. Practically all buying in this territory has been for small lots for early shipment, most users being covered by contract. We quote $27, Pittsburg, on Bessemer and open-hearth wire rods.

Coke.—There has been a decided increase in the consumption of coke; prices are firmer than for several weeks and there has been considerable buying in this market during the past 10 days, due to the fact that consumers of both furnace and foundry coke who have been buying from month to month have covered for their August requirements, and to the closing of several contracts for the year to July 1, 1912. A blast furnace interest has taken 12,000 tons of Connellsville furnace coke for August shipment at $1.50, ovens, and small lots for delivery next month have sold at a slightly higher figure. An Ohio furnace interest which requires from 6,000 to 7,000 tons of coke a month has closed for approximately 35,000 tons of furnace coke for delivery over the remainder of the year at a price understood to be about $1.60, ovens. A local seller reports sales of Connellsville foundry coke during the past three or four weeks, aggregating 60,000 tons, chiefly for forward delivery, on a basis of from $2.10 to $2.25, ovens. One transaction involves 30,000 tons to a radiator interest, the company having closed with another seller for an equal amount. Production last week showed a gain of 12,000 tons over the previous week and shipments showed a corresponding increase. There has been a slight increase in the active oven list and the average running time of the ovens. There is no coke being stocked. We quote standard Connellsville furnace coke for prompt shipment at from $1.50 to $1.60, ovens, and for second half at from $1.60 to $1.70, ovens. On high grade Connellsville foundry coke we quote from $1.85 to $1.95, ovens, for prompt shipment and from $2 to $2.40, ovens, for forward delivery. The Connellsville *Courier's* figures for the week ending July 22 show 23,757 active ovens with an output of 282,633 tons, as compared with 23,714 active ovens and a production of 270,700 tons the previous week.

Old Material.—Consumers of old material have bought rather freely during the past week or 10 days, and the market shows a firmer tone, as consumption at present is heavier than for some months. A large consumer in the Monongahela river territory has closed for scattered lots of heavy melting steel ranging from 200 tons to 1,500 tons during the week and during the past six weeks has bought upward of 10,000 tons of heavy melting steel. Other consumers west of Pittsburg have also taken moderately heavy tonnage of this grade and the market appears to be firm at $13.25, delivered, as the minimum. We note another advance of 50 cents a ton in the price of machine shop turnings, and cast borings are quoted at an advance of 25 cents a ton. Demand for stove plate and malleable is light and prices on these grades are weak. We quote,

gross tons, delivered in the Pittsburg district, including Monessen, Sharon, Steubenville, Brackenridge and Follansbee, as follows:

Heavy melting scrap	$13.25 to 13.50
Rerolling rails	13.50 to 14.00
Bundled sheet scrap	11.00 to 11.50
Iron axles	23.50 to 24.00
Old iron rails	15.50 to 16.00
Stove plate	10.00 to 10.50
No. 1 wrought scrap	13.50 to 14.00
Old car wheels	12.75 to 13.00
Low phosphorus	16.00 to 16.50
Machine shop turnings	9.50 to 10.00
Cast borings	9.00 to 9.50
No. 1 cast scrap	13.00 to 13.50
Malleable	12.50 to 13.00

Increased Activity of Mills—Pig Iron Sales Small.

Office of THE IRON TRADE REVIEW,
1328 Monadnock Block, Aug. 1.

In several important lines of finished products, Chicago mills are on a normal basis of business. The rail mills are running full, the structural and plate mills have full rolling schedules, and the sheet mills are comfortably busy. The merchant bar mills had a dull month in July, but will roll a good tonnage of soft steel bars, on specifications from the agricultural implement trade, during August and September. The bar iron and hard steel bar mills have not shared as yet in the general improvement. The wire mills are going through their usual dull season. On the whole, July has been the best month in the year, chiefly on account of liberal buying by railroads. It is usually the dullest month. There are inquiries for 10,000 freight cars and for other railroad equipment which look encouraging. Prices are firm, considering present conditions, as in merchant lines of material there is practically an open market. It requires a large and attractive tonnage to develop concessions, excepting in the case of billets, which are shaded on small lots. If the merchant lines were keeping up with railroad material, the steel mills in the Chicago district would be running at full capacity.

Pig Iron.—Southern furnaces which have been selling on the $10 basis the past month have withdrawn this price and $10.25 is the minimum openly quoted this week. There is not enough business going, however, to test the market and fix the advance permanently, and the quotation below is therefore left unchanged. Sales of southern iron in Chicago territory during July amounted to around 40,000 tons, with inquiries carried over into August amounting to 8,000 to 10,000 tons. It is remarkable that sales did not reach two or three times this total with the price at $10, below average cost at southern furnaces. The indifference of buyers is also apparent in their attitude since the market showed signs of firmness during the past week. They show no haste in closing on pending inquiries, although another week of firmness may change their attitude.

There are three inquiries for malleable Bessemer in Chicago territory which total 20,000 tons, for deliveries running into the first quarter of 1912. The local furnaces are reluctant to quote on this forward business, in the present state of the market, but the inquiries are from old customers. There is a better current demand for foundry iron.

The following prices represent the market for Chicago delivery, except northern foundry No. 2 and malleable Bessemer, local furnaces, which are quoted f. o. b. furnace.

(Shipment this year.)

Lake Superior charcoal	$17.00
Northern foundry No. 2	14.50
Southern foundry No. 2	14.35
Southern silveries, 5 per cent silicon	16.35
Jackson Co. silveries, 8 per cent	18.40
Malleable Bessemer	14.50
Alabama basic	14.00

Billets.—There is no demand for rolling billets to test the market in this territory, but inquiries for small current lots of open-hearth forging billets bring out very low prices. Last week mills which quoted as low as $26, Chicago, on inquiries for prompt shipment were unable to get the business. There are no rigidly maintained prices on any line of finished material and the present open market policy of the mills is more apparent in billets than any other line. We quote as follows, f. o. b. Chicago: Open-hearth forging billets, $26 to $27; re-rolling billets, $23.60.

Merchant Bars.—The steel bar mills have had light rolling schedules during July, but specifications have been coming in at a rate which promises a fair output for August. The implement manufacturers had practically no stocks when they finally renewed their contracts, and they are specifying liberally for August shipment. Prices on current business for prompt shipment vary according to the size and attractiveness of the tonnage, but the range of concessions is narrow, 1.38c, Chicago, being the prevailing price for orders of any size. Bar iron is reported a little firmer at 1.20c, with some business being taken at 1.25c. Hard steel bars are quiet.

We quote, Chicago delivery, as follows:

Bar iron, 1.20c to 1.25c; hard steel bars, rerolled, 1.20c to 1.25c; soft steel bars and bands and small shapes, 1.38c to 1.43c, base; hoops, 1.63c to 1.68c; smooth finished machinery steel, 1 inch and larger, 1.83c. Shafting 60 per cent off list for carload lots, 55 per cent off for less.

On iron and steel from local stock, we quote as follows:

Bar iron, 1.80c to 1.90c per pound base; soft steel bars, 1.65c to 1.75c per pound base; soft steel hoops, 1.80c to 1.90c, full extras.

Structural Material.—Structural material leads in the volume of current business. The fabricating shops have had a good run of small orders this summer for highway bridges and similar work. The tonnage of this small business is not shown in published reports of contracts let, but it represents a good share of the business that comes to the steel mills. Prospects are favorable, as car orders now pending will require a large tonnage of structural shapes. In Chicago, plans have been completed for a new building for the Field Columbian Museum which will require about 8,000 tons, and another large office and bank building is in prospect. The principal letting in the west last week was 3,210 tons to the American Bridge Co., for water works construction at Tacoma, Wash. The same interest was awarded a post office at San Diego, Cal., 259 tons. The Llewellyn Iron Works booked 104 tons for tank construction at Katella, Alaska, for the Cooper River & Northwestern Ry. Co. A bridge in Sacramento county, Cal., went to the Judson Mfg. Co. A bridge contract at Denver, 175 tons, is understood to have been let to Milwaukee Bridge Co. The Kenwood Bridge Co. has been awarded 250 tons of shop construction for the M. Rumely Co., Laporte, Ind. A new by-product coke plant at Joliet, Ill., with 35 Koppers ovens, will require 350 tons, but the name of the successful bidder has not been announced.

We quote structural material f. o. b. Chicago, as follows:

Beams and channels, 15 inches and under, 1.48c to 1.53c. For extras, see Pittsburg report.

Plain material out of store is as follows:

All angles, 3 inches and larger, including 6 inches, $1.75 to $1.85 per 100 pounds; angles over 6 inches, $1.85 to $1.90 per 100 pounds, base; beams, 3 to 15 inches, inclusive, $1.75 per 100 pounds, base; channels, 3 inches and larger, $1.75 per 100 pounds, base.

Rails and Track Fastenings.—The railroads are specifying at a very satisfactory rate for track material, and Chicago mills are running practically full. The Gary rail mill has been

gaited up to a larger output the past week.

We quote light rails, f. o. b. Chicago, and track fastenings, f. o. b. Joliet, as follows:

Light rails, carloads, 40 to 45-pound, 1.16c to 1.20½c; 30 to 35-pound, 1.19½c to 1.24c; 16, 20 and 25-pound, 1.20½c to 1.25c; 12-pound, 1.25c to 1.29½c.

Light section relayers, 45 pounds and under, subject to inspection, $21 to $23; standard section relaying rails, subject to inspection, $23.50 to $24.

Track fastenings, f. o. b. Joliet, angle bars, 1.50c to 1.60c; railroad spikes, 1.65c to 1.75c; smaller size spikes, 1.70c, base; track bolts with square nuts, 2.10c to 2.20c, base.

Plates.—Chicago mills rolled a good tonnage during July and prospects are very encouraging. The fabricating shops are specifying at a normal rate and there are inquiries from railroads for about 10,000 freight cars which will bring the car shops into the market for a round tonnage of steel. The Erie railroad was to have closed in July for 3,800 cars, but has postponed the letting until August. The Illinois Central is inquiring for 2,000, the Missouri Pacific 2,500, the Wabash 1,200, the Atlantic Coast Line 1,000, and other roads for scattering lots of freight and passenger equipment. The market is showing more firmness.

We quote mill prices f. o. b. Chicago, as follows:

Tank steel, ¼ inch and heavier, up to 72 inches wide, 1.75c to 1.85c.

Store prices are as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches wide, 1.48c to 1.53c. For extras, see Pittsburg report.

Sheets.—The low prices which have prevailed the past two months have brought in a good tonnage in current orders and specifications as well as contracts for the remainder of the year. The Inland Steel Co. is running practically full.

For mill prices, see Pittsburg report. Freight to Chicago, 18 cents.

We quote store prices f. o. b. Chicago, as follows:

Blue annealed, No. 10, 2.00c; No. 12, 2.05c. Box annealed, No. 28, 2.65c. Galvanized, No. 28, 3.55c.

Wire Products.—The jobbing trade is very quiet. The drop in prices in June, after they had specified remaining tonnage on old contracts, proved a disappointment to many jobbers, and they are deferring inquiries for fall trade until they have cleared their old stocks. Manufacturing consumers are specifying at their usual rate at this season.

We quote f. o. b. Chicago, as follows:

Wire nails, jobbers' carload lots, $1.88; retailers' carload lots, $1.93; retailers' less than carload lots, $2.03; painted barb wire, jobbers' carload lots, $1.88; retailers' carload lots, $1.93; retailers', less than carload lots, $2.03, with 30c for galvanizing; plain wire to jobbers, $1.68; plain wire, retailers' carload lots, $1.73.

Merchant Pipe and Tubes.—There is a little improvement in the volume of current business. July is usually a very dull month, but conditions are above the average this summer in tonnage.

We quote merchant pipe and tubes out of store, Chicago, as follows:

Iron and Steel Pipe Basing Prices.

	Steel. Black.	Steel. Galv.	Iron. Black.	Iron. Galv.
⅛-¼ inch	69.2	54.2	63.2	48.2
⅜ inch	72.2	59.2	66.2	53.2
2 in. to 3 in.	77.2	66.2	72.2	61.2
4½-6 inches	74.2	63.2	69.2	58.2
7-12 inches	71.2	54.2	67.2	50.2
Extra Strong Plain Ends.				
⅛ inch	70.2	63.2	54.2	52.2
2-3 inches	75.2	68.2	61.2	55.2
7-8 inches	65.2	....	59.2	47.2
Double Extra Strong.				
⅛ inch	58.2	50.2	....	....
2-3 inches	63.2	55.2	....	....
7-8 inches	53.2	41.2	....	....

Tubes.

	Lap weld steel. Per cent.	Charcoal iron. Per cent.	Shelby seamless. Per cent
1 inch	39	..	57½
1¼ to 2¼ inch	55	40	35
2¾ to 3¼ inch	62½	50	46

Cast Iron Pipe.—Bids went in at Minneapolis last week on about 3,000 tons of water pipe, which will be awarded in a few days. The market generally is quiet, but the foundries are running full on contracts. Prices are firm. We quote, f. o. b. Chicago, as follows:

Four-inch water pipe, $25.25; 6 to 12 inches, $24.50, larger sizes, $24; gas pipe, $1 a ton higher.

Old Material.—The usual midsummer dullness prevails in the scrap market. Prices are based upon current offerings by dealers of material in transit. There is enough scrap offered in this manner, on cars or in transit, to supply the current demand, and buyers wait until it is offered them, a trade condition which keeps prices at a low level. A buyer who made formal inquiry for a round lot would probably pay quite a margin above the level fixed by present conditions. Railroad offerings are light this week.

We quote for delivery in consumers' yards, Chicago, as follows:

GROSS TONS.

Old car wheels	$12.75 to 13.25
Old iron rails	14.50 to 15.00
Rerolling rails (5 ft. and over)	12.25 to 12.75
Old steel rails (3 ft. and under)	11.25 to 11.75
Frogs, switches and guards	10.25 to 10.75
Heavy melting steel	10.50 to 11.00
Shoveling steel	9.90 to 10.40

NET TONS.

No. 1 R. R. wrought	$11.00 to 11.50
No. 2 R. R. wrought	10.00 to 10.50
Arch bars and transoms	13.75 to 14.25
Knuckles, couplers and springs	10.00 to 10.50
Shafting	15.00 to 15.50
Iron car axles	17.75 to 18.25
Steel car axles	16.00 to 16.50
Locomotive tires	14.00 to 15.00
Dealers' forge	9.50 to 10.00
Pipes and flues	8.00 to 8.50
No. 1 cast	10.75 to 11.25
No. 1 busheling	8.75 to 9.25
No. 2 busheling	6.75 to 7.25
No. 1 boiler cut	7.50 to 8.00
Boiler punchings	12.50 to 13.00
Cast and mixed borings	5.25 to 5.75
Machine shop turnings	6.50 to 7.00
Railroad malleable	10.00 to 10.50
Agricultural malleable	9.25 to 9.75
Angle bars, splices, etc., iron	12.00 to 12.50
Angle bars, steel	10.00 to 10.50
Stove plate and light cast scrap	9.25 to 9.75

Limited Sales of Ore—Steel Bar Prices in Toledo Inquiry.

Office of THE IRON TRADE REVIEW, Penton Building, Aug. 1.

Iron Ore.—Some small additional inquiry is noted the past day or so and one firm reports a sale of 20,000 tons of Bessemer, 5,000 tons of low grade ores and a few car loads of silicious ores. However, furnacemen are slow in coming forward with shipping orders and unless the prospects change materially for the better in the next two weeks, there is stronger probability of an early ending to the lake ore shipping season. There has been more slackness noted also in the coal shipments the past week.

On base ores with the guarantee of 55 per cent on old range and Mesabi Bessemer, and 51½ per cent on old range and Mesabi non-Bessemer, we quote as follows: Old range Bessemer, $4.50; Mesabi Bessemer, $4.25; old range non-Bessemer, $3.70; Mesabi non-Bessemer, $3.50.

Pig Iron.—Buying in this territory has almost reached the minimum, only small quantities being the rule and almost altogether for immediate shipment. One furnace interest in this city, however, finds encouragement in the fact that its books show that in the past month sales have been made to considerably over a hundred different buyers, nearly all for small lots but in the aggregate making a fair tonnage. This shows that foundries are operating, making prospects better for the fall season. Basic iron in the valleys has been advanced to $13 as the minimum, the lower quotations having disappeared. No. 2 foundry valley, has settled, however, to $13.50, furnace. It is believed here that the Westinghouse inquiry for its Cleveland and Northside, Pittsburg, plants will close within a few days. The cast iron pipe inquiry is still being discussed in this market. We quote, delivered Cleveland, as follows:

No. 1 foundry	$14.50
No. 2 foundry	14.25
No. 2 southern	14.35
Gray forge	13.25

Bessemer	15.90
Lake Superior charcoal	17.50
Jackson Co. 8 per cent silvery	18.00

Coke.—Aside from the closing by one local furnace interest for the bulk of its year-end requirements, little interest is shown in this market in furnace coke. Foundries are buying in small lots, but neither furnace nor foundry coke is especially active in Cleveland. We quote:

Connellsville furnace coke, $1.40 to $1.50 for prompt delivery, and $1.60 to $1.80 for second half, Connellsville foundry coke, $1.80 to $2 for prompt, and $2.15 to $2.35 for second half.

Finished Material. — Continued improvement in mill operations is being supplemented by additional receipt of satisfactory specifications. In fact, specifications are coming forward so steadily that some difficulty is being experienced in meeting delivery promises. This situation appears to be general in this city. Still, some softness is noted in sheets, and the 1.20c price on steel bars noted in other markets has appeared here for the more desirable business, although 1.25c is also being done. The lower price of iron bars has now given way to a firmer tendency and 1.25c more nearly represents the actual market. The Empire mill resumed operating today, but the Union mill is still idle. It is now stated that the reason why the city hall structural steel bids were recently all rejected and the commission decided to readvertise was because all of them were higher in the aggregate than the appropriation. The E. Fifty-fifth street market house bids are still in the hands of the projectors and no award is expected for some days.

The 200 or 300 tons of steel for the Packard Motor Car Co.'s new shops at Detroit have been taken by the Russel Wheel & Foundry Co. Figures are in and an award will likely be made this week for 1,000 tons for the Michigan Trust Co.'s proposed building at Grand Rapids, Mich. About the largest inquiry in this market is for 800 tons of reinforcing bars from a Toledo firm, and it is said that low prices are being named in connection therewith, even 1.15c, Pittsburg, being shaded.

Old Material.—After the small flurry in heavy melting steel the past few weeks, the market activity has tapered off somewhat. The larger local users apparently have covered for some time ahead although their works are actively consuming material. Buying has slackened in other lines of old material although there is nothing that would suggest anything more than a normal quiet spell. We quote, gross tons, f. o. b. Cleveland, as follows:

Old iron rails	$15.00 to 15.50
Old steel rails (under 6 ft.)	12.50 to 13.50
Old steel rails (over 6 ft.)	12.50 to 13.00
Relaying rails	20.00 to 21.00
Old car wheels	12.00 to 12.50
Old steel boiler plate	10.00 to 10.50
Malleable iron (railroad)	11.75 to 12.00
Steel axles	19.00 to 19.50
Axle turnings	9.00 to 9.50
Malleable iron (agricultural)	11.00 to 11.50
Heavy steel	12.00 to 12.50
Country mixed steel	9.00 to 9.50

We quote, net tons, as follows:

No. 1 R. R. wrought	$12.00 to 12.50
No. 1 busheling	11.00 to 11.50
No. 1 machine cast	11.50 to 12.00
No. 1 dealers' wrought	11.50 to 12.00
Machine shop turnings	8.00 to 8.50
Pipes and flues	8.00 to 8.50
Wrought drillings	8.00 to 8.50
Stove plate	9.50 to 10.00

Advance Authorized by Some Sellers, But $10 Still Available.

Office of THE IRON TRADE REVIEW,
808 Provident Bank Bldg., Aug. 1.

Pig Iron.—Several of the larger producers in the south have authorized an advance of 50 cents per ton, within the past few days, and the effect has been a slight stiffening in prices, and the development of a stronger tone to market conditions generally. Just what this will mean to future buyers, it is rather difficult to say, as it is a well known fact that a number of brands can yet be secured at the old figure of $10, Birmingham, for delivery throughout the remainder of the year. As to the reason for this advance, the most plausible, perhaps, is a rumor that states that during the past week cast iron pipe interests have very materially reduced furnace stocks, thereby placing them in better position to maintain the advance in prices and await further developments. The number of sales and also inquiries pending have fallen off considerably as compared with the previous week's business and the situation in this respect is quiet and dull. Demand for special brands has also shown a decrease, and tonnage sold has been of little interest. The northern situation continues unchanged, and prices are said to be fairly well established on a $13, Ironton, basis. The tonnage of basic that was recently secured by one of the large melters of southern Ohio is said to have been in the neighborhood of 20,000. The inquiry that has been pending for 1,500 tons of malleable for this year and a like amount for next year's requirements coming from a northern Ohio melter has not as yet been closed, as furnaces are unwilling to open books so far into the future. A local consumer bought 175 tons of No. 2 and 125 tons of No. 3 southern foundry for last half on a $10, Birmingham, basis. A Michigan melter bought 500 tons southern and an equal tonnage of northern for last half delivery. Several sales have been made in Indiana and also in southern and central Ohio territory.

We quote, prices based on freight rates of $3.25 from Birmingham, on $1.20 from Ironton, as follows:

Southern foundry No. 2	$13.25
Southern foundry No. 3	12.75
Southern foundry No. 4	12.50
Southern gray forge	12.00
Mottled	12.25
Southern No. 1 soft	14.70
Southern No. 2 soft	14.20
Standard southern car wheel	25.50
Northern No. 2 foundry	14.20
Northern No. 3 foundry	13.70
Northern No. 4 foundry	13.20
Jackson county 8 per cent silicon	16.95

Coke.—Selling agencies report a fairly normal spot trade, with contract shipments moving on about schedule time. No contracts of interest have resulted during the week, and the situation is quiet and featureless. We quote from the leading coke producing districts, as follows:

	Prompt shipment.	Contract second half.
Connellsville district:		
Foundry coke	$2.00 to 2.25	$2.00 to 2.40
Furnace coke	1.50 to 1.65	1.65 to 1.75
Wise county district:		
Foundry coke	2.00 to 2.25	2.00 to 2.25
Furnace coke	1.75 to 2.00	*Sliding [scale basis.
Pocahontas district:		
Foundry coke	2.00 to 2.15	2.00 to 2.35
Furnace coke	1.60 to 1.75	1.75 to 1.85
New river:		
Foundry coke	2.50 to 3.15	2.60 to 3.25
Furnace coke	2.10 to 2.15	2.10 to 2.20

*Sliding scale basis means $1.60 for coke based on $9, Birmingham, for pig iron, with an advance of 16 2-3 per cent of the amount over $9 at which pig iron is quoted. This is the usual basis. Other forms of sliding contracts are also made.

Finished Material. — Demand for structural shapes and plates is said to be good, with prices holding firm at established quotations. Demand for bars is slightly better than a week since, with no change in prices.

Old Material.—Mills are said to be taking shipments on contract, but the week has developed no business of special importance. Dealers report a fair tonnage received, but there is no prominent feature to the market so far as can be ascertained. Prices are weak, and are about as follows:

GROSS TONS.

Old iron rails, gross	$14.00 to 14.50
Old steel, rerolling, gross	13.00 to 14.00
Old iron axles, gross	19.25 to 19.75
Steel melting scrap, gross	11.00 to 11.75
Car wheels, gross	11.50 to 12.50

NET TONS.

Old No. 1 R. R. wrought	$12.25 to 12.75
No. 1 machinery	10.50 to 11.00
No. 1 busheling	9.25 to 9.75
Stove plate	7.75 to 8.25

Machine shop turnings	6.50 to 7.00
Cast borings	5.50 to 6.25
Grate bars	7.25 to 8.00
Sheet scrap, bundled	8.00 to 9.00
No. 1 cast scrap	10.00 to 11.00
Heavy turnings	7.75 to 8.75

PHILADELPHIA

Pig Iron Tone is Better—Scrap Market Advances.

July 31.

Though the iron and steel market in eastern and southeastern territory is not manifesting any marked improvement, the strengthened tone and sentiment that comes from a sustained larger volume of business are shown. The situation holds forth the promise of better things later in the fall. Eastern makers of finished material are adding very little to their operating capacity. The small buyer continues to make himself so felt in the pig iron market that the tonnage is more satisfactory, with prices unchanged. Scrap prices have begun to advance, some grades being marked up 50 cents this week, and the supply of material is tightening. Speculation is thought to be playing a part in the upturn.

Pig Iron. — Bookings by selling houses generally in this district during July were considerably larger than in June and show substantial evidence of a very fair movement of the market which, though done with no great stir, represents, nevertheless, an appreciable betterment in the volume of orders, over preceding months. This booked tonnage includes some round lots of basic and pipe iron, but much of it is made up in small purchases of foundry grades and such a character of trading is still manifested. Foundry iron orders have usually averaged around 300 tons, but they have been of a sufficient tonnage that, added to some larger sales of basic and pipe making grades, they have put makers in quite a comfortable position. As a result some furnaces are not so willing to sell for extended future shipment and are not urging buyers to close for more than their early requirements. The tone of the market has been considerably improved, but prices are no better. On eastern Pennsylvania grades, prices continue from $15 to $15.25, Philadelphia, for No. 2X. Considerable iron has lately been sold from Virginia territory. The Virginia furnaces are getting into such shape on their bookings that some are seriously considering advancing their schedules. This iron is still held, however, at from $12.25 to $12.50, furnace, for No. 2. A lot of 500 tons of misfit Virginia iron was taken by one of the pipe makers in Delaware river territory this week. The pipe works in this district seem more intent in seeking large lots of lower grades and two of them alone would probably take 15,000 tons or more of No. 4 and forge for forward shipment. Southern forge is still offered at $9, Birmingham, but some furnaces are drawing away from the $10 price for No. 2. Rolling mills took 500 to 600 tons of puddling forge this week, northern and southern, at about $14, delivered, and one inquiry for 500 tons is pending. There have been no sales of importance this week in steel-making irons, basic or low phosphorus. Basic holds to a minimum of $14.50, though there are buyers' offers of $14.25, delivered, current. The large No. 2 furnace of the Warwick Iron & Steel Co., Pottstown, Pa., blew in this week on foundry and basic and the West End furnace, Virginia, has gone out.

We quote for prompt and third quarter shipment, as follows:

No. 1X foundry	$15.25 to 15.50
No. 2X foundry	15.00 to 15.25
No. 2 plain	14.50 to 15.00
Standard gray forge	14.00 to 14.25
Basic	14.50 to 14.75
No. 2X Virginia	15.05 to 15.30
No. 2 southern	14.00 to 14.50
Standard low phosphorus	20.50 to 21.00

Finished Material.—Such a miscellaneous assortment of business is coming to the mills that from the standpoint of individual orders, the market shows no noteworthy developments. The aggregate tonnage, however, is considerable and eastern shape, plate, sheet and billet mills are holding their own in operation. July output, generally speaking, was larger than June, but the margin of increase at this time is pretty small, and makers are scarcely more than maintaining even activity.

An increased number of reports of price shading are in the market, and these, to some extent, are disturbing. The products mentioned as having been cut are steel bars, sheets, shapes and plates. It is known that steel bars have been offered down to 1.15c, Pittsburg, in the east, and black sheets sharply undersold, but positive cases of plate and shape irregularities in Philadelphia territory are lacking. Rivet prices are quite loose, owing to the many makers competing for this trade. Some of the largest makers are quoting 1.60c on structural, and 1.70c on boat rivets, but these prices are being cut.

The New York Shipbuilding Co. has placed 1,000 to 1,500 tons of shapes and of plates for government tugs, the order being reported as having gone to the leading interest. James B. Doak has the general contract for the Ritz-Carlton hotel, this city, 1,000 tons, the steel for which will be furnished by the American Bridge Co. The Philadelphia & Reading railroad has plans prepared for a large round house at St. Clair, Pa. The Panama canal commission is asking bids on 350 tons of structural shapes to close Aug. 7. The *Post-Despatch* building and Reuger's hotel, both Richmond, are still pending. None of the large amount of prospective boat work in the east has yet reached the development of asking proposals.

We quote, delivered in Philadelphia and vicinity, as follows:

Structural shapes, 1.50c; steel plates, 1.50c; steel bars, 1.35c to 1.40c; refined bar iron, 1.27c to 1.32c; cut nails, $1.75 to $1.80; blue annealed sheets, No. 10 gage, 1.65c; 4 x 4-inch open-hearth rolling billets, $24.40; forging billets, $28.40.

Coke.—Prices in coke here hardened somewhat, and there is considerable difficulty in obtaining the low spot and contract quotations which have recently prevailed on first quality furnace coke. Offers of $1.40, ovens, for spot lots of furnace coke by eastern concerns were reported this week by makers, as was done with some fair-sized contracts at $1.50, ovens, one of them for 2,500 tons monthly. Makers are now asking from $1.60 to $1.65, ovens, on contracts for the better brands. A good movement of foundry coke continues at unchanged prices.

Old Material.—The market has rather abruptly taken on a buoyant condition and business is being done at levels representing from 25 to 50 cents over last week's prices. Dealers and holders of scrap have tightened in their ideas of values, and are withholding the material from the market under asking prices which are fully $1 a ton over recent quotations, and it is reported considerable speculation is being done. Small sales are the rule, as consumers are not willing yet to pay sharp advances asked even if the material were available, which is not the case under prevailing conditions. The steel mills this week took small lots at $13.50, delivered, and would accept round tonnages at this price, but the dealers are asking more. Turnings, borings, wrought pipe, iron and steel rails, steel car axles and heavy steel are all up this week, usually about 50 cents. We quote, gross tons, delivered in eastern Pennsylvania and New Jersey territory, as follows:

Old iron rails	$17.50 to 18.00
Old steel rails (rerolling)	14.25 to 14.75

No. 1 heavy melting steel	13.50 to 14.00
Old car wheels	13.00 to 13.50
Old steel car axles	18.50 to 19.00
Old iron car axles	24.00 to 25.00
No. 1 R. R. wrought	15.50 to 16.00
Wrought pipe	13.00 to 13.50
Cast borings	8.75 to 9.25
Wrought turnings	9.50 to 10.00
Heavy cast scrap	13.00 to 13.50
Railroad malleable	11.50 to 12.00
Stove plate	10.50 to 11.00

Freight rates per ton on scrap from Philadelphia to principal eastern consuming points are: $0.60 to Ivy Rock, Pa.; $0.65 to Phoenixville, Pa.; $0.80 to Coatesville, Pa.; $0.85 to Bethlehem, Pa., Reading, Pa., and Roebling, N. J.; $1.10 to Pottsville, Pa., Lebanon, Pa., and Columbia, Pa., and $1.20 to Harrisburg and Steelton, Pa.

BUFFALO

Firmer Tendency Shown in Pig Iron, Prices Advancing.

Aug. 1.

Pig Iron.—A decidedly firmer tendency is noticeable in the pig iron market this week, and a slight advance is shown in almost all grades. One of the largest interests announced this morning that it will refuse all business at less than $14 for No. 1X, and the minimum figures shown in the following schedule of prices, and another large interest quoted the same figures, although its representative said that $13.50 to $14 might be quoted on No. 1X where particularly desirable business was involved. Although inquiries are not coming in as well as formerly a fair tonnage has been placed at the new figures, including about 15,000 tons in New England, Canada and eastern New York. Some of the furnaces report that collections are better than at any time in the past two years, which they take as a possible indication that the foundries and other users found their semi-annual statements satisfactory. We quote f. o. b. furnace, as follows:

No. 1X	$13.50 to 14.00
No. 2X	13.75
No. 2 plain	13.50
No. 3	13.50
Gray forge	13.00 to 13.25
Malleable	13.50 to 14.00
Basic	13.25 to 13.75
Charcoal	16.50 to 17.50

Finished Products.—The market remains steady with very little change from last week. There is a fair demand for structural material and prices are firm. General lines are steady.

Old Material.—No important business has been reported in the last week. The prices here quoted are largely nominal. We quote, gross tons, f. o. b. Buffalo, as follows:

Heavy melting steel	$12.75 to 13.00
No. 1 railroad wrought scrap	14.75 to 15.25
No. 1 railroad and machine cast scrap	14.00 to 14.50
Old steel axles	18.50 to 19.00
Iron axles	23.00 to 24.00
Car wheels	13.75 to 14.25
Railroad malleable, scrap	13.75 to 14.00
Machine shop turnings	7.00 to 7.25
Cast iron borings	6.50 to 6.75
Low phosphorus steel scrap	17.00 to 17.50
Old iron rails	16.75 to 17.25
Tank iron	10.75 to 11.25
Sheet iron	6.50 to 7.00
Pipes and flues	10.75 to 11.25
Stove plate	12.00 to 12.50
Grate bars	11.50 to 12.00
Boiler plate	11.50 to 12.00

NEW YORK

Pig Iron and Finished Steel Markets Reflect Better Tone.

Office of THE IRON TRADE REVIEW,
1115 West Street Bldg., Aug. 1.

Iron Ore.—Some of the eastern furnaces are buying their raw material supplies in a very careful manner, usually taking in small lots from time to time. In this way some fair sales of eastern local ores are being made to eastern Pennsylvania makers at from 7½ to 7¾ cents per unit, delivered. Some of the sources of foreign supply are shipping in ore quite freely, but others show smaller receipts. The Wabana, Newfoundland, movement continues to run at from 25,000 to 30,000 tons monthly. The leading Cuban interest is accumulating a large tonnage at the mines, but is consuming practically all it brings in.

Pig Iron.—A movement of hardening prices and more cheerful feeling is gradually working its way through the market. While recent selling has in no sense been spectacular, because it has included so much small covering, the tonnage, nevertheless, has been sufficient to cause makers to stiffen in their selling policies. In some directions, actual advances have been paid for iron by consumers. This is especially true with reference to southern grades, in which some makers, after freely offering $10.00, Birmingham, for No. 2, have raised their asking prices and in some cases of non-competitive business, some of which were in the east, they were able to obtain this week $10.25, and even $10.50, Birmingham. There has been some fair selling of southern iron in the east of late, principally for mixture purposes. Two lots of 1,500 tons each have been included and this has gone largely to New England. In Buffalo territory some iron is being sold at $13.50, furnace, for No. 2X, while one maker is asking $13.75. There are reports, however, that $13.50 is being shaded, but this is attributed to only one interest. Another source of shading of late has been in Virginia territory, where one or two makers have on occasions been underselling their competitors. The price of $12.00, furnace, for No. 2 has been made, but the majority of producers, including the largest maker, are holding from $12.25 to $12.50, furnace, and are booking considerable business at these levels, so that their position is strengthening. The West End furnace in Virginia has gone out for relining and has placed its unfilled orders of 5,000 tons or more with other makers there. The volume of going business is very fair, but much of this is in the nature of small tonnages. The largest lot under negotiation is 6,000 tons of basic for forward shipment for a Rhode Island wire company, which will probably go to Virginia furnaces. A number of lots of 500 tons and less are pending. A Connecticut melter is asking for 500 tons of malleable for third quarter; a Brooklyn buyer for 600 tons of foundry; a New Jersey interest for 500 tons, and numerous other small lots are pending. Delaware River pipe works have taken several thousand tons of southern and northern off grades during the past week. Practically all these consumers are buying in some form. We quote for prompt and third quarter shipment as follows:

Northern foundry No. 1	$15.00 to 15.50
No. 2X foundry	14.75 to 15.25
No. 2 plain	14.50 to 14.75
No. 2 Virginia	15.05 to 15.30
No. 2 southern foundry	14.00 to 14.50
Malleable	15.00 to 15.25
Gray forge	14.00 to 14.25

Ferro-Alloys. — Since all leading makers of ferro-manganese advanced their prices to $37.00, Baltimore, practically no business whatever has been done at this or any other level. Some consumers are inquiring, but they are waiting to ascertain the market's firmness before closing. Most of the leading consumers are well covered. Fifty per cent ferro-silicon shows no changes of note. We quote nominally 80 per cent ferro-manganese at $37.00, Baltimore, and 50 per cent ferro-silicon at from $52.00 to $53.00, Pittsburg.

Cast Iron Pipe.—All bids upon the 11,000 tons for the city of Detroit have been rejected, but no date has been fixed for receiving revised bids. R. D. Wood & Co. took 225 tons for Taunton, Mass., and bids went in today on 300 tons for Athol, Mass. Brooklyn has a contractor's letting involving 300 tons up for bids Aug. 3. Makers report that either private or public business is not coming out at this season as freely as in past years. Some of the eastern plants, however, continue to run quite full. We quote 6-inch pipe at from $21.00 to $21.50, f. o. b. New York.

Finished Material.—The recent improvement in the market is being well maintained. With some companies there continues a slight expansion from week to week, but with others this change is less perceptible. However, as far as can be observed, the situation shows no tendency to slip back and with the interest of buyers being well sustained, the tone of the market continues to improve and cheerfulness is more prominent. Price irregularities are attracting considerable

attention. The shading, as indicated by known cases and by reports, pertains to steel bars, sheets, plates and shapes. The shape situation in the east, however, shows little irregularity, and whatever of price cutting in this direction is being done, applies largely to fabricated material.

Structural awards are slowing down somewhat in this territory and this seems to be due in part to the inflence of the season. The Cambria Steel Co. has taken 1,500 tons for the Dupont hotel, Wilmington, Del., and some overhead work for the Pennsylvania railroad, requiring a small tonnage. The American Bridge Co. has 1,000 tons for the West Philadelphia high school. Eitlitz & Ross have the 1,000 tons for the New York Telephone building, Thirty-seventh street, this city, and the steel will be furnished by the Bethlehem Steel Co. Ravitch Bros. have 800 tons for the Golden loft at Lafayette and Howard streets, this city. Garsline & Swan have the general contract for the Rochester station of the New York Central, 800 tons, and Bethlehem sections will be furnished. The Geo. A. Fuller Co., this city, is expected to receive the general contract for the Kansas City Union station, 8,000 to 10,000 tons, upon which bids have been entered. Nothing has been learned regarding the destination of this steel. The Aeolian building, this city, 4,000 tons, is still pending, and action is not likely to be taken for several weeks. The Jersey Central railroad has put out an inquiry for a Scherzer lift bridge, which will require several hundred tons of steel. The Bartholomay Brewing Co., Rochester, will require 300 tons for a brew house. Railroad work is light, the principal pending lots being about 2,000 tons for the New York Central, largely for terminal work, in this city, and the same amount for the Chesapeake & Ohio railroad. No action has yet been taken for the steel requirements for the subway extensions in this city, upon which work has been started. We quote, for delivery at New York tidewater and vicinity, as follows:

Angles, 3 to 6 inches and heavier, 1.51c; tees, 3 x ¼ inch and heavier, 1.51c; plates, tank, carload, 1.51c; boiler steel, 1.61c; marine boiler, 1.91c; bar iron, 1.30c to 1.35c; soft steel bars, 1.36c to 1.41c.

Rails and Track Material.—Texas interests have been figuring upon the construction of new steam line in that state, to be known as the Chicago, Weatherford & Branzois railroad, and have had up with rail mills the consideration of their rail needs, about 27,000 tons. The matter is still in indefinite form. The proposed line is to be about 270 miles in length. Some other rail buying in the south is promised, but eastern roads at this time are well taken care of in their rail requirements. The New Orleans, Mobile & Chicago has placed 5,500 tons of open-hearth rails with the Tennessee company which, in addition, reports 7,000 scattering. The Illinois Steel Co. booked this week 13,700 tons of Bessemer in small lots, the largest of which was 3,000.

Old Material.—The market has become quite excited over the recent improvement in finished conditions. Some brokers are again freely speculating and are offering for some grades as much as the mills will pay, principally heavy melting steel, which is $13.50, delivered. There is a tendency to hold material for advances and as a result, the tonnage is coming out less freely, although considerable scrap has accumulated in different hands. Some grades show better prices, one sale of 300 tons of No. 1 wrought being noted at $16.00, delivered. Some scrap dealers in New York territory have gone to Panama to investigate the conditions surrounding the large quantity of scrap there, upon which the government will shortly take bids in bulk. We quote, gross tons, prices New York dealers will pay at tidewater, with the exception of cast scrap, which has a local demand, as follows:

Old car wheels	$10.75 to 11.00
Old iron axles	17.50 to 18.00
Old steel shafting	14.50 to 15.00
No. 1 heavy melting steel	11.00 to 11.25
No. 1 R. R. wrought	13.00 to 13.50
Iron track scrap	11.50 to 12.00
Wrought pipe	10.25 to 10.50
Cast borings	6.50 to 6.75
Wrought turnings	6.75 to 7.25
Heavy cast scrap	11.50 to 12.00
Railroad, malleable	10.00 to 10.50
Stove plate	8.75 to 9.00
Grate bars	9.00 to 9.50

Freight rates on scrap per ton to Steelton, Pa., Columbia, Pa., Pottsville, Pa., and Harrisburg, Pa., are $1.50 from Jersey City and $2.00 from New York; to Coatesville, Pa., Ivy Rock, Pa., Phoenixville, Pa., and Reading, Pa., $1.50 from Jersey City and $1.80 from New York; to Bethlehem, Pa., $1.10 from Jersey City and $1.60 from New York, and to Roebling N. J., $1.00 from Jersey City and $1.50 from New York.

Round Tonnage Sold to Pipe Company—Prices Hardening.

Birmingham, July 31.

Pig Iron.—It is now practically certain that a sale of 20,000 tons of local iron to a pipe manufacturing concern was closed during the past week. The details of this transaction are not confirmed officially, but as a result of the sale, the available tonnage at a basis of $10 per ton, Birmingham, has no doubt been materially reduced. As to just what tonnage can now be had at the basis just mentioned, a definite statement is not warranted, owing to the disposition of two of the producing interests to govern all quotations by the conditions attendant upon each inquiry. It is known, though, that the $10 basis could not be had except from probably two concerns. A large producer quotes a basis of $10.50 per ton, Birmingham, for last quarter deliveries and has nothing to offer for shipment prior to that time. Three other producers quote the $10.50 per ton schedule for deliveries over the remainder of the year and two concerns adhere strictly to a schedule of $11 per ton, Birmingham, for shipments at any time prior to Jan. 1. With the exception of the round tonnage sale referred to above, the volume of business transacted during the week was light when compared with the volume of the week previous.

The inquiries received involved a large tonnage, but there is a decided tendency among the prospective buyers to await further developments before committing themselves at the prices now prevailing for the brands preferred. The most significant of the inquiries now pending are given as lots of 1,250 tons, 1,000 tons and 600 tons, respectively. Furnace shipments since last report are understood to have been satisfactory, and while stock figures for Aug. 1 will not be in hand for another week, it is believed that a reduction in the accumulation was effected during the month of July. One stack producing foundry iron has just been blown out for repairs, but will be re-lighted in a comparatively short time, as will probably two additional stacks that are now being repaired. The increase proposed in the output will, of course, be effective in fixing the established price for first quarter shipments and developments in that connection are being awaited with much interest by all parties concerned. At this time it is understood that all order-books are comparatively free of commitments for delivery during the period referred to. We quote the market as stronger at the following schedule for shipments during the remainder of the year, with a concession of 25c per ton to be had in some cases for shipments during the third quarter. Quotations are per gross ton f. o. b. cars, Birmingham district furnaces, as follows:

No. 1 foundry	$11.00
No. 2 foundry	10.50
No. 3 foundry	10.00
No. 4 foundry	$9.50 to 9.75
Gray forge	9.25 to 9.50
Mottled	9.00 to 9.25

Cast Iron Pipe.—Quotations on this material are unchanged with the tonnage placed during the past week consisting principally of small lots. Ap-

proximately 10,000 tons of water pipe is now pending, and a large contract for Portland, Ore., is to be placed Aug. 1. The output is unchanged and notwithstanding the volume of business in sight no plans are yet announced for the resumption of operations at the plant of the former Dimmick Pipe Co. and the plant of the Sheffield Cast Iron Pipe Co. We quote as follows per net ton f. o. b. cars here: 4-inch to 6-inch, $22; 8-inch to 12-inch, $21; over 12 inches, average $20, with $1 per ton extra for gas pipe.

Old Material.—Very little has transpired since last report to change the aspect of this market. Quotations are not revised owing to the lack of sufficient business transacted to fix definite prices. We quote nominal asking prices as follows per gross ton, f. o. b. cars here, viz.:

Iron axles	$15.00 to 16.00
Iron rails	13.00 to 13.50
Steel axles	14.00 to 14.50
No. 1 R. R. wrought	12.00 to 12.50
No. 2 R. R. wrought	11.00 to 12.00
No. 1 country scrap	8.50 to 9.00
No. 2 country scrap	7.50 to 8.00
No. 1 machinery	10.00 to 11.00
No. 1 steel	9.50 to 10.00
Old standard car wheels	11.00 to 11.50
Light cast and stove plate	8.00 to 8.50

Better Tone of Pig Iron—Busy Season for Alaska Trade.

July 28.

Pig Iron.—A little better tone was given the foreign iron market this week by the sale of several lots of from 75 to 100 tons each in various sections. These are the first that have been made for some time and a number of the dealers have hopes of cleaning up the supply which they have had lying on the docks for some weeks. As a result of the sales also, there were a number of small orders placed with foreign companies for delivery this fall. An increased output by the lumber mills in their effort to get back to the schedule which was in effect before the order went out for all of them to curtail their productions, has also had a good effect, and the work that they have given the foundries is being felt. The railroads are also entering into the buying and repairing field as the result of the heavy traffic of the past few months and the foundries are getting back on full time again. There is a heavy demand for the eastern and southern grades in the Pacific northwest, but the high quality of the foreign iron assists in starting it moving again. We quote foreign iron in gross tons ex-ship Puget sound or Columbia river, delivery f. o. b. Pacific coast terminals, as follows:

	Prompt.	Fourth quarter.
No. 1 Glengarnock	$25.00	$25.00
No. 1 Eglinton	24.00	24.50
No. 1 English Jarrow	24.00	24.50
No. 1 Cleveland	24.00	24.50
No. 1 Chinese Hanyang	23.50	23.50
English Doncaster	23.50	23.50

Finished Material.—Builders' material has been slow for the past two weeks, but the announcement of several substantial contracts will no doubt result in the wholesalers starting on new activities this month. Some of the jobbers have allowed their stocks to get rather low and they are now replenishing them with large orders. There is considerable activity in the handling of agricultural implements and hardware. Wire and nails have been in strong demand in the ranching sections. Nails remain at $3.15 base. The Alaska season being in full swing, the jobbers have turned their attention to its needs and are sending large amounts north on every steamer. The railroads in Oregon and Washington are doing considerable building and have added some strength to the finished material field. The prices on the material most in demand are: Common iron and mild steel, $2.75; drill steel, $8.25; black sheet steel, No. 27 gage, $4.10; and galvanized sheet steel, No. 28 gage, $5.05 base.

Coke.—The importation of foreign brands of coke continues heavy although the local companies are increasing their outputs every month. The cokes coming from Pierce and King counties, Washington, are especially active and several new fields will probably be opened in the near future. They are unable to supply the demand at the present time and several producers are looking to extensive additions to their present plants.

British Iron Markets

Better Pig Iron Prospects as Well as Finished Material.

Office of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., July 22.

Although the shipments from the Cleveland market during this month have been the poorest of the year, prices are keeping up well, and the additions to stocks have been practically insignificant. They are still round about 596,000 tons. Selling prices are firm, although for the moment there is a slight pause in buying, due to the fact that immediate wants have been largely supplied, but a good sign is the existence of inquiries, in view of next year's needs. The selling price at Middlesbrough yesterday was 46s 10½d ($11.47) for warrants, with 47s 2d ($11.54) for August, and 49s ($12) for September and October. For the next half year, the quotations are 50s ($12.24). Apparently, there is a confident expectation of autumn improvement. At Birmingham on Thursday, there was a fair business in pig iron, but smelters are now very well furnished with orders, and are cutting down all contracts for large quantities unless consumers are prepared to pay somewhat better prices. It is recognized that the best buying period was three weeks to a month ago. In the Sheffield district, there is less underselling than of late, and prices are firming up generally. At Manchester, some furnaces are asking 6d more than they were. The Scotch market has been very materially affected by the holidays, but the conditions there are excellent and with the shipyards supplied with sufficient orders for the next 12 months there must be a heavy consumption of material. In the hematite department, the outlook is very good. Present north east prices are 61s 6d ($15.06) for mixed numbers, prompt delivery, and some very good business has been carried through with Sheffield consumers. In the Barrow district, sales of hematite are comparatively small.

Finished Department. — Following the Birmingham quarterly meeting, there has been a useful addition to the order books of makers of finished iron and steel. It is some years since South Staffordshire bar makers were so well off; one or two works are re-opening and finding employment for the hands dismissed in connection with the failure three months ago of Tupper & Co. In the galvanized sheet department, there has been a marked increase of orders, but competition is so keen that prices cannot be raised. From all directions come news of foreign rail enterprises of which this country is largely to reap the benefit.

In the Birmingham district the finished steel works are busier than for some time, while as to crude steel prices of bars and billets are quite half a crown better than they were, owing, it is said, to reduced foreign competition. This is partly due to labor troubles at the ports which have very materially affected imports from Belgium. Continental prices are cut so fine that the additional shipping rates had the immediate effect of making prices prohibitive. It is probable that these circumstances have more to do with the improvement

than the international enactment initiated by Judge Gary, which is receiving the credit for the improvement. Steel workers are making full time at Barrow in the Bessemer departments.

METAL MARKETS

New York

Aug. 1.

Tin.—The pig tin market was favorably influenced today by the publication of the monthly statistics of this country and Europe. Spot and August tin advanced 20 points to 41.62½c, and there are indications of improvement in demand. The domestic figures showed larger deliveries into consumption, by about 300 tons, but arrivals of about 200 tons less in July, than had been expected. Approximately only 500 tons were added to local stocks, whereas the trade generally had looked for an addition of about 1,000 tons. Arrivals for the month aggregate 4,837 tons and shipments to the interior 4,300 tons. Stocks including on dock and landing are 1,503 tons. European stocks increased only 635 tons, notwithstanding it was a Banca auction month, and 2,500 tons were added to the supply of tin. The combined statistics may be said to be decidedly favorable to the foreign syndicate's position, and it will surprise many if a further advance in prices does not follow. The arrivals today are 430 tons, and there are 2,555 tons afloat.

Copper.—Apparently deliveries of copper metal for domestic consumption were not as heavy in July as in June. It has been difficult, and increasingly so, for the past two years, accurately to prejudge what the statement of the Copper Producers' Association will show, however, and when the report is made public it is quite possible that the surface indications may be refuted. The shipments for export last month aggregated 34,955 tons, and due to the extreme heat in July, there is good ground for expecting a reduced total of production, compared with June. Upon those facts the trade is anticipating a decrease in surplus of about 15,000,000 pounds. Lake copper is held at 12.75c to 12.87½c, and electrolytic at 12.75c, delivered 30 days, and 12.62½c, cash New York, by the leading sellers. Small lots are available ⅛c under those quotations, from second hands, and some small producers.

Lead.—Trade opinion does not credit the recent buying of lead to consumers. Those who have expressed themselves, however, did not claim to have knowledge of who is responsible for the strength of the market. The American Smelting & Refining Co. is still quoting 4.50c for shipments, while independent interests are asking 5.60c in New York.

Spelter.—Sellers display great caution in committing themselves, and with less than a normal demand prevailing the price has advanced to 5.85c in New York. This has aroused suspicion of the advance and buyers are also sounding the market well before closing.

Antimony.—The antimony market continues dull. Cookson's is 8.50c; Hallett's is 8c and Hungarian is 7.25c.

Chicago.

July 31.

New Metals.—The market is very quiet, and sales are confined to small lots for prompt shipment. Railroads are not increasing their purchases and foundry consumption is restricted by general dullness in business.

We quote dealers' selling prices, f. o. b. Chicago, as follows:

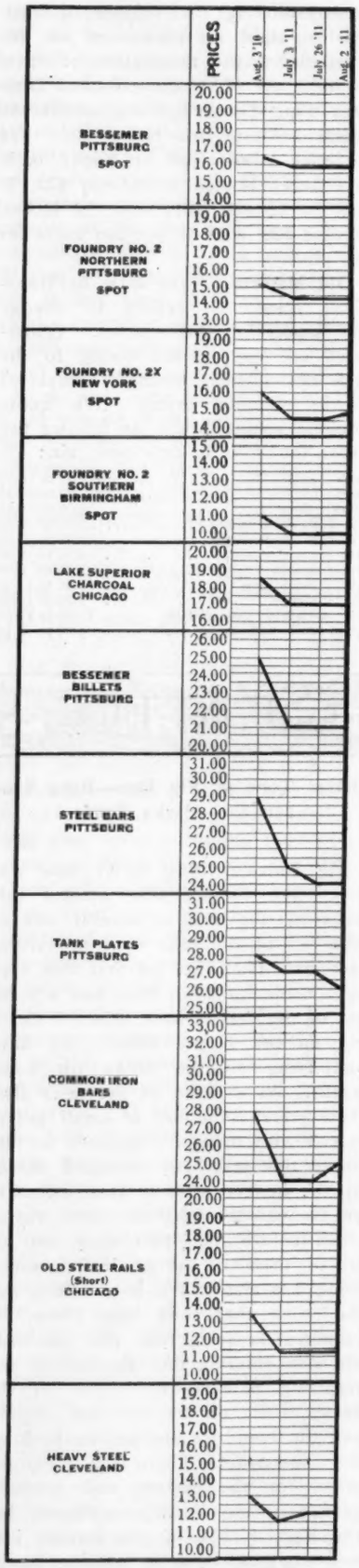
Lake copper, carload lots, 13c; casting, 12¾c; smaller lots, ¼c to ⅜c higher. Spelter, car lots, 5.80c to 5.85c; lead, desilverized, 4.47½c in 50-ton lots; corroding, 25c per 100 pounds higher; sheet zinc, $7.50 list, f. o. b. La Salle, in car lots of 600-pound casks; pig tin, 43½c; Cookson's antimony, 10c; other grades 9c to 10c.

Old Metals.—Restricted consumption in the foundries makes the demand for old metals light and the tin market quiet. Prices remain practically unchanged.

Copper wire, 12½c; heavy copper, 12c; light copper, 10½c; heavy red brass, 10½c; heavy yellow brass, 9¼c; light brass, 7c; No. 1 red brass borings, 9½c; No. 1 yellow brass borings, 7½c; brass clippings, 8½c; tea lead, 3.80c; lead scrap, 4½c; zinc, 4½c; tin pipe, 39½c; tin foil, 38c; pewter, 27c; electrotype plates, free from wood, 4c; electrotype dross, 3c; stereotype plates, 4½c; stereotype dross, 3¼c; linotype dross, 3¼c; prime slab zinc dross, $70 per ton.

The plant of the Yeager-Hunter Stove Works, Spring City, Pa., was recently sold by the receivers, H. E. Campbell and Eli Garber, to Allen W. Urner and Wm. P. Miles, at a price of $37,500. The sale carries with it the real estate and all of the property owned by the Yeager-Hunter Stove Works.

PRICE CHART



PRODUCTION OF PIG IRON IN THE UNITED STATES IN THE FIRST SIX MONTHS OF 1911.

Statistics collected from the Manufacturers by The American Iron and Steel Association, all in Gross Tons.

Production in the First Half of 1910, 14,978,738 Gross Tons; Second Half of 1910, 12,324,829 Tons; First Half of 1911, 11,665,796 Tons.

Total Production of All Kinds of Pig Iron.

TOTAL PRODUCTION OF PIG IRON BY STATES.

States.	Blast Furnaces. In blast Dec. 31, 1910.	Blast Furnaces. June 30, 1911. In.	Out.	Total.	Production—Gross tons. (Includes spiegeleisen, ferro-manganese, ferro-silicon, ferro-phosphorus, etc.) First half of 1910	Second half of 1910.	First half of 1911.
Massachusetts	1	1	1	2	7,505	9,077	6,424
Connecticut	3	0	3	3			
New York	15	15	14	29	1,017,951	920,456	833,467
New Jersey	2	1	8	9	155,087	109,694	39,277
Pennsylvania	74	81	84	165	6,065,688	5,206,635	4,822,832
Maryland	2	3	2	5	170,708	155,506	131,531
Virginia	9	7	18	25	244 275	200,701	159,996
Georgia	1	0	4	4	6,725	8,000	.....
Texas	0	0	4	4			
Alabama	20	17	33	50	1,012,545	926,602	809,795
West Virginia	1	3	1	4	137,439	37,222	130,455
Kentucky	2	3	4	7	46,520	53,989	46,493
Tennessee	10	9	11	20	235,969	161,600	165,722
Ohio	35	35	41	76	3,210,562	2,541,550	2,740,142
Illinois	11	16	10	26	1,552,160	1,123,486	882,807
Indiana	3	6	3	9	716,832	533,271	552,056
Michigan	9	7	9	16			
Wisconsin	4	2	5	7	170,814	136,386	147,477
Minnesota	1	1	0	1			
Missouri	1	2	0	2			
Colorado	2	3	3	6			
Oregon	0	0	1	1	227,958	200,654	197,322
Washington	0	0	1	1			
California	0	0	0	0			
Total	206	212	260	472	14,978,738	12,324,829	11,665,796

PRODUCTION OF BITUMINOUS COAL AND COKE PIG IRON.

New York	15	15	7	22	1,017,901	920,456	833,467
New Jersey	2	1	6	7	152,975	109,694	39,277
Pennsylvania	61	72	55	127	5,688,738	4,932,343	4,671,653
Maryland	2	3	1	4	170,108	155,506	130,901
Virginia	8	6	15	21	247,731	204,611	159,485
Georgia	1	0	2	2			
Texas	0	0	3	3			
Alabama	17	16	29	45	997,206	906,237	788,895
West Virginia	1	3	1	4	137,439	37,222	130,455
Kentucky	2	2	4	6	45,963	52,988	46,159
Tennessee	9	8	10	18	234,393	159,685	164,482
Ohio	35	34	38	72	3,210,542	2,540,510	2,739,517
Illinois	11	16	10	26	1,552,160	1,123,486	882,807
Indiana	3	6	3	9	673,580	520,216	542,193
Michigan	1	2	2	4			
Wisconsin	3	1	5	6			
Minnesota	1	1	0	1			
Missouri	0	1	0	1	253,610	212,678	226,431
Colorado	2	3	3	6			
Washington	0	0	1	1			
Total	174	190	195	385	*14,382,346	*11,875,632	*11,355,722

* Includes a small quantity of ferro-silicon made with coke and electricity.

ANTHRACITE AND MIXED ANTHRACITE AND COKE PIG IRON.

New York	0	0	5	5	376,739	272,343	149,227
New Jersey	0	0	2	2			
Pennsylvania	10	6	25	31			
Total	10	6	32	38	376,739	272,343	149,227

PRODUCTION OF CHARCOAL PIG IRON BY STATES.

Massachusetts	1	1	1	2	*7,555	9,077	6,424
Connecticut	3	0	3	3			
New York	0	0	2	2			
Pennsylvania	3	3	4	7	2,323	1,949	1,952
Maryland	0	0	1	1	965	590	1,141
Virginia	1	1	3	4			
Alabama	3	1	4	5	15,339	20,365	20,900
Georgia	0	0	2	2			
Texas	0	0	1	1	5,037	6,416	1,574
Kentucky	0	1	0	1			
Tennessee	1	1	1	2			
Ohio	0	1	3	4	20	1,040	625
Michigan	8	5	7	12	155,740	105,065	98,232
Wisconsin	1	1	0	1			
Missouri	1	1	0	1	*32,674	*32,352	*29,909
Oregon	0	0	1	1			
California	0	0	0	0			
Total	22	16	33	49	*219,653	*176,854	*160,847

* Includes a small quantity of pig iron made with charcoal and electricity.

TOTAL PRODUCTION OF PIG IRON ACCORDING TO FUEL USED.

Bituminous	174	190	195	385	14,382,346	11,875,632	11,355,722
Anth. & anth. & coke	10	6	32	38	376,739	272,343	149,227
Charcoal	22	16	33	49	219,653	176,854	160,847
Total	206	212	260	472	14,978,738	12,324,829	11,665,796

Miscellaneous Pig Iron Statistics.

PRODUCTION OF PIG IRON IN PENNSYLVANIA AND OHIO.

	Districts.	Blast Furnaces. In blast Dec. 30, 1910.	Blast Furnaces. June 30, 1911. In.	Out.	Total.	Production—Gross tons. (Includes spiegeleisen, ferro-manganese, ferro-silicon, ferro-phosphorus, etc.) First half of 1910.	Second half of 1910.	First half of 1911.
Pennsylvania.	Lehigh Valley	12	13	13	26	369,529	389,721	423,788
	Schuylkill "	8	7	10	17	404,583	398,779	375,973
	L. Susq. "	8	7	10	17	358,511	284,759	225,170
	Juniata "	3	1	7	8	93,557	97,997	51,518
	Allegheny Co.	23	33	14	47	2,895,729	2,435,253	2,488,508
	Shenan. Valley	9	9	15	24	1,041,381	883,127	637,625
	Miscel. bitum.	8	8	11	19	900,075	715,050	618,298
	Charcoal	3	3	4	7	2,323	1,949	1,952
Ohio.	Mahoning Val.	14	16	8	24	1,345,926	1,189,043	1,134,795
	Hocking "	0	0	1	1	866,805	607,660	827,976
	Lake Counties	6	9	7	16			
	Miscel. bitum.	8	6	10	16	722,360	563,415	594,005
	H. R. bitum.	7	3	12	15	275,451	180,392	182,741
	H. R. charcoal	0	1	3	4	20	1,040	625

PRODUCTION OF BESSEMER AND LOW-PHOSPHORUS PIG IRON.

New York	464,263	370,369	240,641
Pennsylvania	2,466,797	1,927,108	1,741,542
Maryland	170,108	155,506	130,901
Virginia, West Va., Kentucky, and Tenn.	184,281	84,296	173,284
Ohio	1,942,374	1,518,362	1,707,978
Illinois	1,035,681	790,726	650,066
Michigan, Wisconsin, Minn., Col., and Cal.	60,379	75,392	60,012
Total	6,323,883	4,921,759	4,704,424

PRODUCTION OF BESSEMER AND LOW-PHOSPHORUS PIG IRON IN PENNSYLVANIA AND OHIO BY DISTRICTS.

Pennsylvania.	Lehigh Valley	88,370	76,606	91,720
	Schuylkill Valley			
	Lower Susquehanna Valley	59,374	67,089	44,932
	Allegheny County	1,322,242	1,029,907	1,070,758
	Shenango Valley	996,811	753,506	534,132
	Miscellaneous bituminous			
Ohio.	Mahoning Valley	873,483	865,424	803,726
	Lake Counties	505,261	325,660	478,229
	Hanging Rock bituminous	563,630	327,278	426,023
	Miscellaneous bituminous			

PRODUCTION OF BASIC PIG IRON, NOT INCLUDING CHARCOAL IRON.

New York and New Jersey	274,032	140,196	158,293
Pennsylvania—Allegheny County	1,480,013	1,327,538	1,335,712
Other counties	1,228,391	1,211,123	1,128,377
Virginia	392,559	304,818	178,012
Alabama			
Ohio	612,331	543,103	518,544
Indiana, Illinois, Mich., Missouri, and Col.	956,616	613,888	616,549
Total	4,943,942	4,140,666	3,935,487

PRODUCTION OF SPIEGELEISEN AND FERRO-MANGANESE.

Pennsylvania	91,381	65,218	66,577
Illinois	39,566	28,266	11,018
Total	130,947	93,484	77,595

PRODUCTION OF ALL KINDS OF PIG IRON FROM 1906 TO 1910.

States—Gross tons.	Production—(Includes spiegeleisen, ferro-manganese, etc.) 1906.	1907.	1908.	1909.	1910.
Massachusetts	20,239	19,119	13,794	18,388	16,582
Connecticut					
New York	1,552,659	1,659,752	1,019,495	1,733,675	1,938,407
New Jersey	379,390	373,189	225,372	294,474	264,781
Pennsylvania	11,247,869	11,348,549	6,987,191	10,918,824	11,272,323
Maryland	386,709	411,833	183,502	286,856	326,214
Virginia	483,525	478,771	320,458	391,134	444,976
Georgia	92,599	55,825	24,345	26,072	14,725
Texas					
Alabama	1,674,848	1,686,674	1,397,014	1,763,617	1,939,147
West Virginia	304,534	291,066	65,551	228,282	174,661
Kentucky	98,127	127,946	45,096	86,371	100,509
Tennessee	426,874	393,106	290,826	333,845	397,569
Ohio	5,327,133	5,250,687	2,861,325	5,551,545	5,752,112
Illinois	2,156,866	2,457,768	1,691,944	2,467,156	2,675,646
Indiana	369,456	436,507	348,096	964,289	1,250,103
Michigan					
Wisconsin	373,323	322,083	148,938	348,177	307,200
Minnesota					
Missouri					
Colorado	413,040	468,486	313,071	382,766	428,612
Washington					
California					
Total	25,307,191	25,781,361	15,936,018	25,795,471	27,303,567

MATHER TICKET

Elected at Westinghouse Meeting—Resolutions Carried.

At the annual meeting of the stockholders of the Westinghouse Electric & Mfg. Co., which opened Wednesday, July 26, and ended Saturday evening, July 29, the administration ticket, better known as the "Mather ticket," was elected and all of the Mather resolutions were carried. The sessions were held in the board room at the company's offices at East Pittsburg, Pa., and E. M. Herr, vice president, presided. The total valid proxies turned in represented 654,087 shares.

The vote for directors whose terms expire in June, 1915, was as follows: Edwin M. Herr (no opposition), 677,045; James S. Kuhn (no opposition), 677,045; Charles F. Brooker (Mather ticket), 489,987; Edwin F. Atkins (Mather ticket), 489,987; John R. McCune (opposition ticket), 187,058; R. B. Mellon (opposition ticket), 187,058.

The vote for director to succeed Richard Delafield, resigned, was as follows: Harrison Nesbit (Mather ticket), 489,987; A. C. Humphries (opposition), 187,058.

Following the report of the stockholders, the newly re-organized board of directors held a meeting in New York, Aug. 1, at which Edwin F. Atkins, of Boston, who was elected as president of the company to succeed George Westinghouse a year ago, resigned his office and Edward M. Herr, of Edgewood Park, Pa., who has been in charge of the company's manufacturing and commercial operations, was elected to succeed him. Mr. Atkins will, however, remain a director. A permanent organization of the directors was also effected by the election of the following officers; Chairman, Robert Mather; vice presidents, Loyall A. Osborne and Charles A. Terry; acting vice presidents, George A. Hebard and H. D. Shute; vice president in charge of manufacturing and engineering, Harry P. Davis. President Herr has appointed Calvert Townley as his assistant.

Westinghouse Contracts.—A contract has been awarded to the Westinghouse Machine Co., Pittsburg, by the Rhode Island Co., Providence, R. I., for a twin type Lablanc condenser. This unit, a combination of two standard Westinghouse Lablanc outfits, is equipped with two sets of air and circulating pumps mounted on a common shaft. Couplings at each end of the latter provide for either turbine or motor drive. The condenser is designed to handle approximately 8,000,000 pounds of water per hour and will operate in connection with a 12,000-kilowatt turbine in the Manchester street plant of the Rhode Island Co. The company has also received a contract from the Pillsbury Flour Co., Minneapolis, for a 2,000-kilowatt Westinghouse turbine to drive a Westinghouse generator normally rated at 2,500-kilo-volt-amperes, delivering three-phase, 60-cycle current at 2,000 volts.

American Iron and Steel Figures for 1910

The annual statistical report of the American Iron and Steel Association for 1910 is now ready for distribution. The figures on the output of iron and steel in the United States for 1910 and preceding years are full and complete. Tables are given, showing in detail imports and exports of iron and steel, tin plate, iron ore, coal, etc. Details give shipments of Lake Superior ore, Cuban ore imports as well as other foreign ore, shipments and prices of Connellsville coke, tonnage of steel vessels built in 1910, etc. Further, detailed figures of the coal, iron ore and iron and steel industries of Great Britain, Germany, France, Belgium and a dozen other foreign countries are presented for 1909 and 1910. The report contains 120 pages and is well printed on good paper. Price is $5 or 21 shillings per copy, and checks and money orders should be made payable to James M. Swank, general manager, Philadelphia.

St. Louis Shipments

Receipts and shipments of pig lead and spelter at St. Louis for the last two weeks were as follows:

	Zinc and spelter.	Pigs of lead.
Receipts:—		
For the week ending July 22..	83,380	57,330
Shipments:—		
For the week ending July 22..	114,310	19,210
For the week ending July 29..	84,910	26,450
For the week ending July 29..	69,660	53,770

Welsh Tin Plate Trade

Swansea harbor trust returns for the week ending July 15, with comparisons, follow:

	Week of July 15. Boxes.	Previous week. Boxes.	Corresponding week last year. Boxes.
Received	88,144	133,457	96,008
Shipped	99,405	97,463	144,322
Stocks	255,808	267,069	129,399

The Upson Nut Co., Cleveland, is planning to relight its blast furnace about Aug. 10.

CONTRACT LET

For Blast Furnace for the Minnesota Steel Co.

Pittsburg, July 31.

The Pennsylvania Engineering Works, New Castle, Pa., has been awarded a contract for all the iron and steel work and the erection of two new blast furnaces to be built for the Minnesota Steel Co., Duluth, including 10 hot blast stoves, gas washing apparatus, cast houses, skip inclines and crane runways. The furnace itself is to be of the thin lined variety with water-cooled shell.

It will be some time before the company can proceed with the work on the new blast furnaces, as it will be necessary to develop all the drawings and have them approved by the Minnesota Steel Co. before orders can be placed for the necessary material, the detailing of all the work by the Pennsylvania Engineering Works being part of the contract.

World's Pig Iron Output

Statistics compiled by Messrs. James Watson & Co., British statisticians, show that the production of pig iron in the leading producing countries of the world in 1910 amounted to 65,607,788 tons, an increase of 5,242,008 tons compared with 1909, and 17,433,000 tons over 1908. The United States heads the list of countries with 27,298,545 tons, an increase of 1,503,074 compared with the preceding year; Germany is second with 14,793,325 (increase 1,875,672); and Great Britain third with 10,216,745 (increase 552,458). Great Britain's production of 10,216,745 tons was 926,905 tons more than in 1908.

These figures, showing a world production of 60,356,780 tons in 1909, compare with a total of 60,314,000 tons for that year as estimated by James M. Swank and published in the volume of statistics for 1910 just issued by the American Iron and Steel Association.

Foreign Iron Ore

Foreign iron ore is quiet, and market rates are based on 20s c. i. f. Tees for rubio. At the same time it is reported that the best rubio has been offered at 19s 3d, and that the user refused to pay that price. Indeed, it is generally considered that it would be difficult to actually secure 19s per ton.—*Iron and Coal Trades Review*, London.

CONSTRUCTION

Of Subways Actually Inaugurated in New York City.

Actual construction of the proposed tri-borough extensions of the New York subway system has been inaugurated on the Lexington avenue branch of the extensions. Interesting ceremonies, July 31, marked the beginning of the work and the first dirt was turned at Lexington avenue and Sixty-seventh street by Chairman Wilcox, of the public service commission, who used a silver spade in this act. A large crowd of people viewed the ceremony. Following the addresses delivered by city officials, permits for the particular section of the work at this point were turned over to the contractors, the Bradley Constructing Co., and workmen were immediately set to the task of excavating. The beginning of the work on the Lexington avenue line signalizes the fact that the enormous project of extending the subway system of the metropolis is now started.

Death of H. S. Haselton

The death of H. S. Haselton, of Pickands, Mather & Co., which occurred at Cleveland, July 27, came as a distressing shock to his business associates and many friends. He entered the Union club at the noon hour, complained of a headache, sank upon a nearby sofa and before his companion was aware, had passed away. Death was due to a stroke, his health not having been robust for several years.

Hyatt S. Haselton was born Dec. 29, 1857, at Janesville, Wis. He was a son of Jared M. Haselton, a pioneer settler of Janesville when the town was but an incident on the main travelled Milwaukee road. Having received a common school education, the boy entered the general store in which his father had been employed and by studying stenography at night undertook to fit himself for a business career. When he had about reached his majority he became private secretary to S. P. Burt, then vice president of the North Chicago Rolling Co. at the Bayview works near Milwaukee. Mr. Burt was also secretary of the Metropolitan Iron & Land Co., engaged in iron ore prospecting, then in its infancy, and when he died Mr. Haselton succeeded him as secretary of the Metropolitan company. S. S. Curry, pioneer in the development of the Menominee iron range, was identified with the Metropolitan company and for years he and Mr. Haselton were closely associated in business. Their activities about 1883 included development of the Beaufort and Titan properties on the Marquette range, attention also being devoted to the Felch mountain range. Later the Metropolitan company took up property in the Gogebic range and about 1885 the property had been developed into what has since been known as the splendid Norrie mine. Mr. Curry was president and Mr. Haselton secretary and treasurer of the Norrie company. When the development of the Norrie property had been fairly well accomplished, they developed the Odanah mining property. After the Oliver Iron Mining Co. purchased the Norrie mine about 1899, Mr. Haselton went to Cleveland, entering the offices of Pickands, Mather

HYATT S. HASELTON

& Co. He became secretary and treasurer of the ore mining properties of Pickands, Mather & Co. and was in charge of the ore mining operations of the company.

He possessed a pleasing personality, was frank and very affable, winning and retaining a wide circle of friends. Success in business did not change his very human point of view, and the friends of his more youthful days remained his friends so long as life endured. His home in Cleveland was the center about which revolved his every plan and ambition. He is survived by a widow and five children, by his mother, now 88 years old, and by a brother, Frank C. Haselton, of Chicago, with whom his mother resides. Mr. Haselton was a member of a number of leading clubs of Cleveland.

AMERICAN WORKS

To be Modernized is One of Oldest Shops of Its Kind.

New York, July 26.

Announcement that the American Works of the American Bridge Co. at Chicago is to be rehabilitated and improved for the better handling of various present-day forms of fabricated tonnage is of some passing interest, since this plant is one of the oldest shops of the company; in fact, one of the oldest of its kind in the country. The works were built over 40 years ago and were originally known as the American Iron Works. In addition to some fabricated tonnage, it has been producing car and locomotive axles, shafting and forgings. The plant in arrangement and capacity has been inadequate to meet the modern demands for heavy fabricated work and for this reason it is proposed to thoroughly modernize it to handle such orders. The improvement was originally decided upon by the Steel Corporation two years ago, but appropriations have just been made, insuring the early beginning of the work. The works has a capacity for about 30,000 tons annually.

Report of Inland Steel Co. for Year

At the annual meeting of the stockholders of the Inland Steel Co., Chicago, which was held July 25, the report of the operations of the company was received, showing that after allowances for depreciation and exhaustion of minerals, the net profits for the year were $1,598,624. The financial statement for the year ending June 30, is as follows:

Net earnings from operations after deducting $714,452 for maintenance and repairs		$1,798,437
Other income		1,981
Total profits for year		$1,800,419
Less—		
Deprec. and renewal	$150,000	
Exhaustion of minerals	51,795	201,795
Net profits for year		$1,598,624
Deduct—		
Interest on bonds	$159,750	
Dividends paid	594,344	754,094
Surplus year		844,529
Premium on capital stock		112,000
Previous surplus		2,416,417
Total surplus		$3,372,947

The American Steel & Wire Co. blew out B stack of its Central furnace on July 23, but relighted D stack on July 17. It also relighted one Donora, Pa., stack on July 10, and blew out one Donora stack on July 31.

OF SOME SALES

Average of Basic Prices is Announced —Bessemer Shaded.

Pittsburg, Aug. 2. (By wire.)

The monthly average price of basic pig iron for July is announced by one seller as being $13, valley, $13.90, Pittsburg, as compared with $13.06, valley, for June, and $13.40, valley, for May. The sales on which the average for July is based do not include 60,000 tons bought by the Republic Iron & Steel Co. Several sales were made during the month at $12.75, valley, but it is not known how many of these sales were reported as figuring in the average.

Bessemer iron has been sold at less than $15, valley, and it is reported that two lots of about 1,000 tons each were sold at considerably under $15, valley, but these reports have not been confirmed.

The Pittsburg Steel Co. declared the regular quarterly dividend of 1¾ per cent on preferred stock, payable Sept. 1.

Personal

R. S. Dutton, formerly cashier of Pickands, Brown & Co., Chicago, has been made general manager of sales.

C. H. Learock, formerly proprietor of the Central Iron Foundry, Salem, Mass., has gone to California for his health.

T. I. Crane, of Pilling & Crane, Philadelphia, will leave about Aug. 1 for a European trip, upon which he will be gone several months.

W. H. Carson has been appointed borough engineer at New Kensington, Pa., to fill the vacancy caused by the resignation of Thomas R. Kennedy.

George E. Molleson, 50 Church street, New York, has been made eastern sales representative of the Cowles-MacDowell Engineering Co., Chicago.

Robert Mather, chairman of the Westinghouse Electric & Mfg. Co., has been made a director of the United States Mortgage & Trust Co.

C. Sonneborn, superintendent of the Garland Nut & Rivet Works, New Castle, Pa., has also been made superintendent of the Pressed Radiator Works at that place.

R. H. Fenkhausen, formerly chief electrician of the Risdon Iron & Locomotive Works, has been appointed electrical engineer of the United Iron Works Co., San Francisco.

Jason Paige, who lately resigned his position with the Inter Ocean Steel Co., Chicago, has become contracting engineer for the Pittsburg Steel Products Co., Pittsburg, with offices in Chicago.

D. F. Garrison, cashier of the Colorado Fuel & Iron Co., Denver, Colo., is in St. Luke's hospital in that city as a result of injuries received by being run down by a motor car several days ago.

Franklin Guiterman, general manager of the American Smelting & Refining Co. in Colorado, is spending several months in Europe, where he is studying electric smelting with particular reference to zinc reduction.

James A. Farrell, president of the United States Steel Corporation, has been made chairman of the board of the United States Steel Products Co., a subsidiary company. Mr. Farrell was formerly president of that company.

Edgar Allen, head of the firm of Edgar Allen & Co., Sheffield, Eng., has founded a large institute in which the wage earners of Sheffield will be given medico-mechanical treatment. The institute is said to be the best equipped in England.

Dr. Hugo von Noot, of Vienna, Austria, head of a large steel and iron works in the Austrian empire, has landed at San Francisco to begin a tour of the United States for the purpose of studying the steel industry in this country.

Robert Hobson, general manager of the Steel Co. of Canada, of Hamilton, Ont., and other officials of the company, are at Fort William on preliminary business in connection with the establishment of the rolling mill plant for which the city has agreed to give a 10-acre site.

J. E. Schlieper and R. Daae, consulting engineers, Pittsburg, have associated under the firm name of the Schlieper-Daae Co. and have opened offices in the Ferguson building, Pittsburg. Mr. Daae was formerly identified with the Monterey Iron & Steel Co. and the Tennessee Coal, Iron & Railroad Co.

Charles L. Cordes, for several years chief clerk in the traffic department of the American Steel & Wire Co., Chicago, has been promoted to division freight agent in charge of the Pittsburg district, succeeding L. H. Korndorff, now in charge of the traffic on the Pacific coast with headquarters at San Francisco, Cal.

J. N. Lapointe, who recently resigned as president and general manager of the Lapointe Machine Tool Co., Hudson, Mass., is now president and manager of the newly-organized J. N. Lapointe Co., Marlboro, Mass. Frank J. Lapointe, formerly superintendent and shop manager of the Lapointe Machine Tool Co., has taken a similar position with the new concern.

Obituary

Edward C. Martin, for 35 years cashier of the Quintard Iron Works Co., New York City, died at his home in Brooklyn, July 28, aged 62.

The death of George C. Avery, president of the B. F. Avery & Sons Plow Co., Louisville, Ky., which occurred a few days previously in Paris, France, was announced July 25, in a cablegram from Mrs. Avery, to friends in Louisville, death being due to heart disease. Mr. Avery left this country during the first part of July with his family for a trip to Europe, and was to have returned Sept. 1. He is a son of B. F. Avery, founder of the company.

Bars for Subway—Rails for Southern Ry.

New York, Aug. 2. (By wire.)

The Southern railroad is about to close for 2,000 tons of rails, which probably will be divided between the Maryland and Tennessee Steel companies. A large tonnage of reinforcing bars for sections of subway construction already let promises to develop sharp competition among makers in view of the easiness of bar prices at present. Riveted steel work for four sections on the Lexington avenue line will be furnished by the American Bridge Co., but the tonnage is indefinite, as it will be determined by natural conditions disclosed. It will probably not exceed 10,000.

Union Rolling Mill Election.—At a recent meeting of stockholders of the Union Rolling Mill Co., Cleveland, J. F. Kreps was elected a director, to succeed the late A. S. Upson. The other directors are: A. R. Treadway, J. P. Lamson and H. A. Fuller, of Cleveland, and N. B. Wilcox of Southington, Conn. The officers are: President and treasurer, H. A. Fuller; vice president, A. R. Treadway; secretary, M. L. Hopkins; superintendent and assistant treasurer, J. E. Kreps; assistant secretary, C. H. Graham, Unionville, Conn.

The Ashland Iron & Mining Co., Ashland, Ky., took the blast off its No. 1 stack on July 27 for relining. No. 2 stack will be relighted about Aug. 15.

Building Fly-Wheels for Heavy Duty Service

Methods of Assembling and Machining Practiced in the Engine Plant of the C. & G. Cooper Co., Mt. Vernon, O.

The department of an engine manufacturing plant, devoted to the building of heavy fly-wheels, is one of the most important of the modern heavy duty machinery field. In the design of fly-wheels, a number of fixed as well as variable factors must be considered that involve the character of the work for which the wheel is intended, the speed at which it is to be operated, as well as its size. As a fly-wheel is used primarily as a regulator or balance wheel to smooth out the peaks in the load curve of the engine, it must have sufficient weight and should be of large enough diameter to store up the energy necessary for the purpose for which it is intended. Great accuracy is essential in building large wheels, as the slightest variation will be greatly multiplied under the influence of the revolving mass of the wheel. As revolving wheels are in themselves dangerous, they must, of course, be made sufficiently strong to withstand the tendency to burst while in motion. The manufacture of small fly-wheels is comparatively simple, as the wheels are cast, bored and turned in one piece. For the foundryman, wheels of the medium size frequently involve more difficulties than large wheels, which are made in segments. The weight of a flywheel varies inversely as the square of the velocity of its rotation, and for this reason large, heavy wheels are required for rolling mill and similar work.

Large fly-wheels are generally built in segments to facilitate casting. The C. & G. Cooper Co., Mt. Vernon, O., manufacturer of steam and gas engines, has unusual facilities for handling large fly-wheels. In Fig. 1 is shown a 32-foot wheel, weighing 110 tons, which is being turned and finished in a large pit in the wheel department of this company's machine shop. This wheel is cast in 12 segments, each segment containing one arm and weighing approximately 18,350 pounds. The casting of the segments involves no unusual difficulties in the foundry, where they are all molded from the same pattern. These segments are molded in a pit in loam, the rims being swept and the arms are made in cores. The hub or center is cast in two sections, which are fastened with bolts to the arm segments.

When the segments are cast and delivered to the machine shop, a templet is made of the segments and the steel links that join the segment at the rim. The templets are used for laying out each segment and the rim, hub, ends of arms and link-pockets are planed and finished to size on planers in the machine shop. The two parts of the hub are turned, finished and drilled separately. The 12 segments of the hub are then assembled horizontally on the wheel floor, as illustrated in Fig. 3. The segments are adjusted and are supported by jacks. Each arm is likewise supported by a jack near the center of the wheel. The two center hubs are located approximately at the center of the wheel segment where they are accurately assembled. After all of the segments are fitted together, the wheel is leveled and the segments are held together with temporary clamps in the link-pockets, the hub centers are reamed and the bolts are driven into position.

To facilitate subsequent installation, heavy dowel pins are fitted between the rim joints of each segment. These pins are not only intended to keep the wheel true, but also afford a high resistance to any shearing strains in the rim. One dowel pin is placed parallel

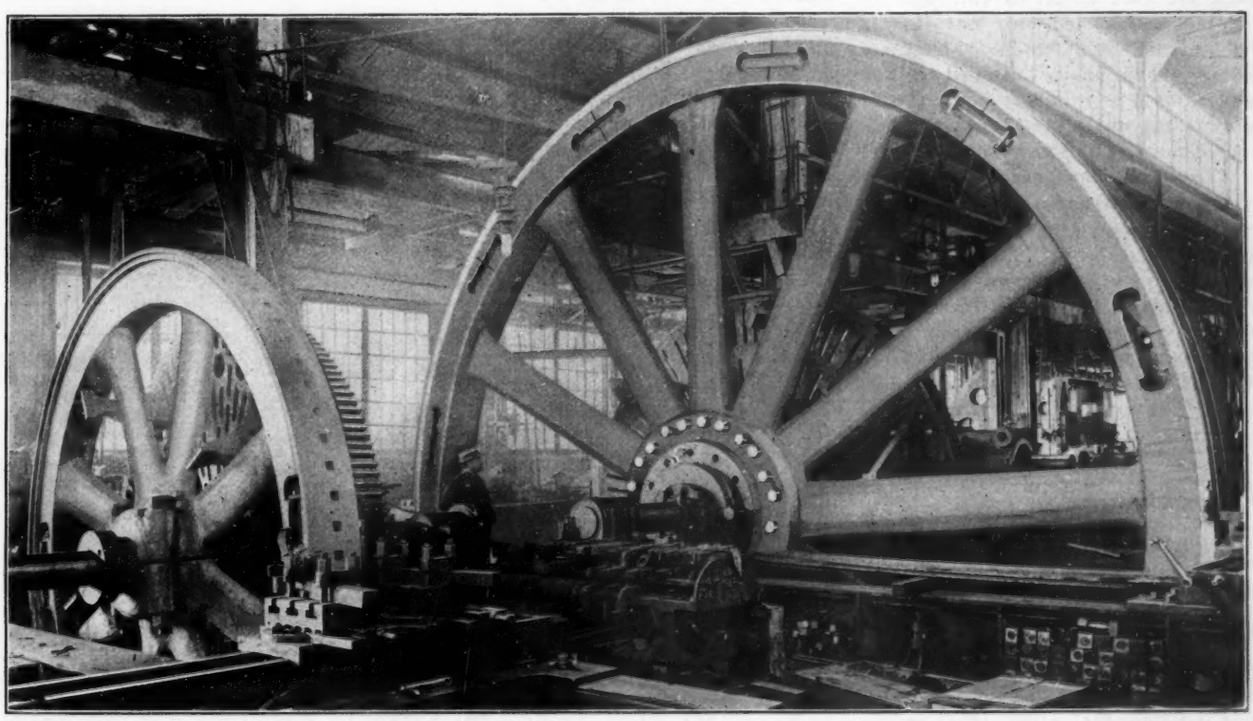


FIG. 1—TURNING A 32-FOOT FLY-WHEEL IN A PIT LATHE

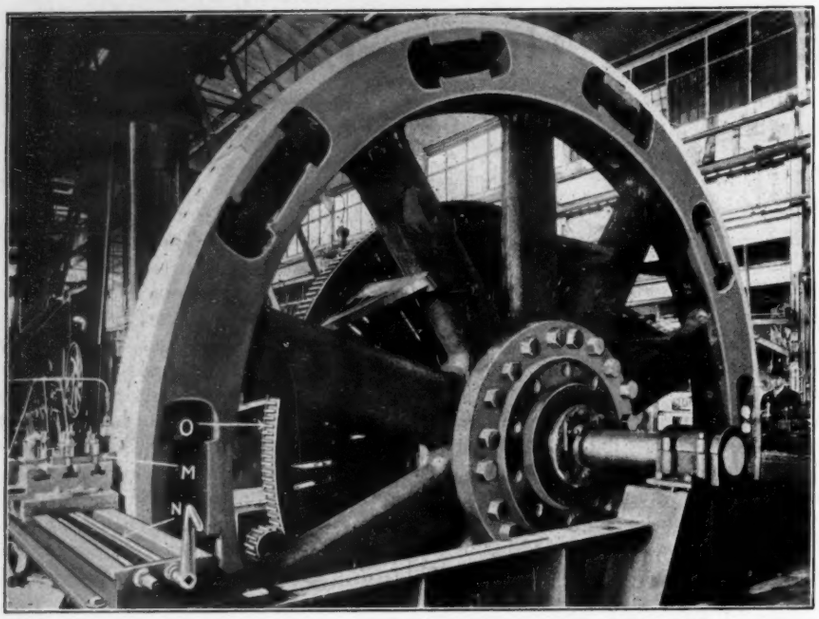


FIG. 2—LARGE FLY-WHEEL IN LATHE PIT, SHOWING THE METHOD OF DRIVING THE WHEEL

to the axis of rotation and extends through the entire width of the rim. A second, shorter pin, is placed at right angles to the first pin on the underside of the rim extending radially about one-half through the joint of the rim.

Being completely assembled on the floor, as shown in Fig. 3, the wheel is taken down and rebuilt in a pit lathe, as shown in Figs. 1 and 2. Here the rim is turned and finished on the sides and circumference. Three bolts are used to fasten each arm to the hub center and only one link is set in each joint and on alternate sides. When finally installed, a link is used in every link-pocket on both faces of the wheel. In these pit lathes, approximately one-half of the wheel is below the floor level. The wheel is mounted on a shaft supported by two steel housings that extend the full length of the pit and carry the lathe bed and tools, as shown in Fig. 2. For turning the circumference and sides simultaneously, several tools are generally used. These tools are held in place by clamps and bolts centered over two or three T-slots extending parallel to the rim of the wheel, as shown at *M*, Fig. 2. A hand-operated lead screw, *N*, is used to feed the tool horizontally across the rim of the wheel and on the axle of the lathe is carried a large spur gear, *O*, which is provided with projecting brackets that fit between the spokes of the wheel and turn it as the gear revolves. The large gear is driven through a train of reducing gears. For holding the wheel true on the lathe shaft, two adjustable, tapered sleeves are used, which are drawn together as desired by a through rod and which are held in place by a circular clamp on either side of the wheel. After turning, the fly-wheel is again taken down and is shipped in segments to its destination.

The fly-wheel, shown in Figs. 1 and 2, is 32 feet in diameter and was built for use on a large twin-tandem, compound rolling mill engine, recently installed by the Cooper company in the new plant of the Jones & Laughlin Steel Co., at Aliquippa, Pa. Another large wheel, recently built at this plant, was 25 feet in diameter and weighed 230,000 pounds. The 10 segments constituting the wheel were made of cast steel and the wheel was used on a tandem compound Corliss rolling mill engine built by the Cooper company for installation in the Edgar Thomson plant of the Carnegie Steel Co., Braddock, Pa. Two large rope wheels were also built in this department, grooved for 59, 1¼-inch ropes. The two wheels were bolted together on the same engine shaft and practically formed one large wheel, which weighed 185,000 pounds. These wheels consist of eight arms and eight rim segments, cast separately and bolted together after the faces and the ends of the rims and arms had been machined. A two-piece hub was bolted on each of the two separate wheels and the construction and method of assembling was similar to that followed in the manufacture of the 25 and 32-foot fly-wheels.

FIG. 3—WHEEL FLOOR, SHOWING THE METHOD OF ASSEMBLING LARGE FLY-WHEELS BEFORE FINISHING IN THE LATHE PIT

Electric Refining Process

In the electric refining of Bessemer steel, a new combination process first removes the carbon and silicon in an acid Bessemer converter, then dephosphorizes the steel in a ladle by means of a molten slag of lime and iron oxide, and finally treats the metal in an electric furnace for the removal of sulphur and oxygen. This process has been patented by J. H. Gray and assigned to the Illinois Steel Co.

F. J. McRea, accountant for the house committee which is investigating the affairs of the United States Steel Corporation, has been ordered to Pittsburg accompanied by an auditor to look over the records of subsidiary companies of the Steel Corporation in that territory. Mr. McRea is also expected to look into the freight situation in the Pittsburg district.

Combination Car Wheel Press

Standard car wheel presses of a convertible type are now built by the Niles works of the Niles-Bement-Pond Co., Hamilton, O. Any press can be used either in a vertical or in an inclined position depending on the provision made for serving the machines. The machine is used inclined when the wheels are handled to and from the press by an overhead traveling crane so that the upper tie bar, *A*, Fig. 1, will not interfere with the crane hook or slings. When using the machine as a vertical press, the wheels are handled by a trolley and wheel hooks running on the upper tie bar as shown at *B*, Fig. 2. For converting the press from a straight to an inclined machine, four slots, *E* and *F*, are provided. In Fig. 1 the machine is in an inclined position with the tie bars in the slots *F* and *F*. The center line of these two slots passes through the axis of the plunger and placing the bars in the slots *E* and *E*, makes the press vertical and still maintains the center line through the axis of the plunger. This shifting of the tie bars is necessary to eliminate the twisting strain on both head and post resistance. When the wheels are carried by a crane, the press is inclined and the crane chains do not interfere with the tie bar.

This car wheel press is built in sizes from 84 to 96 inches, which accommodate the largest driving wheels now built. The combination press has the same motor-driven, triple plunger pumps used on all Niles car wheel presses. The pumps are arranged to operate together or independently, each plunger being provided with an automatic stop for instantaneous disconnection at the will of the operator. The motor is mounted on an extension of the plunger casting and is directly geared to the eccentric cams on the shaft operating the pumps. A counterweight actuated through a chain, draws the plunger back when extended after pressing on a wheel. The only difference in the design of the head or resistance posts from that of the single machines is the additional width of the heads at both ends to accommodate the two parallel slots.

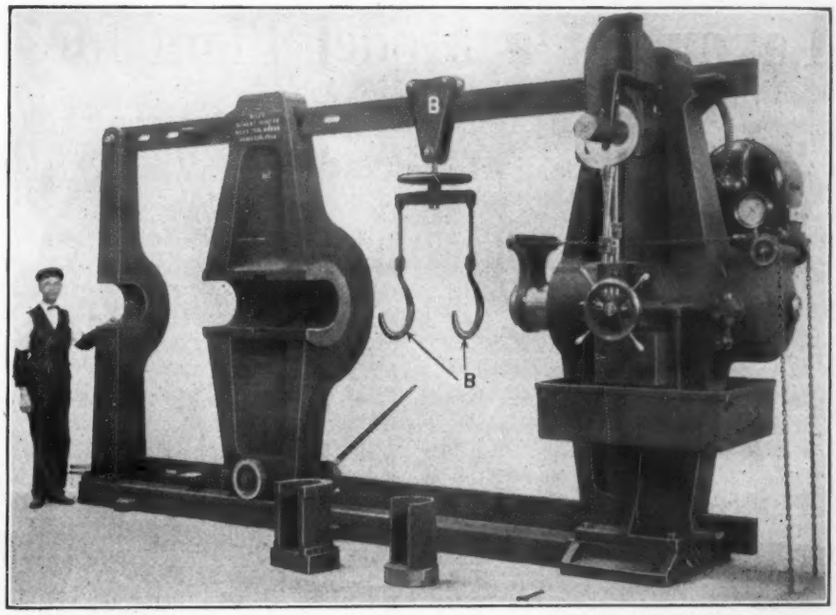


FIG. 2—TROLLEY AND WHEEL AND AXLE HOOKS ON A STANDARD CAR WHEEL PRESS

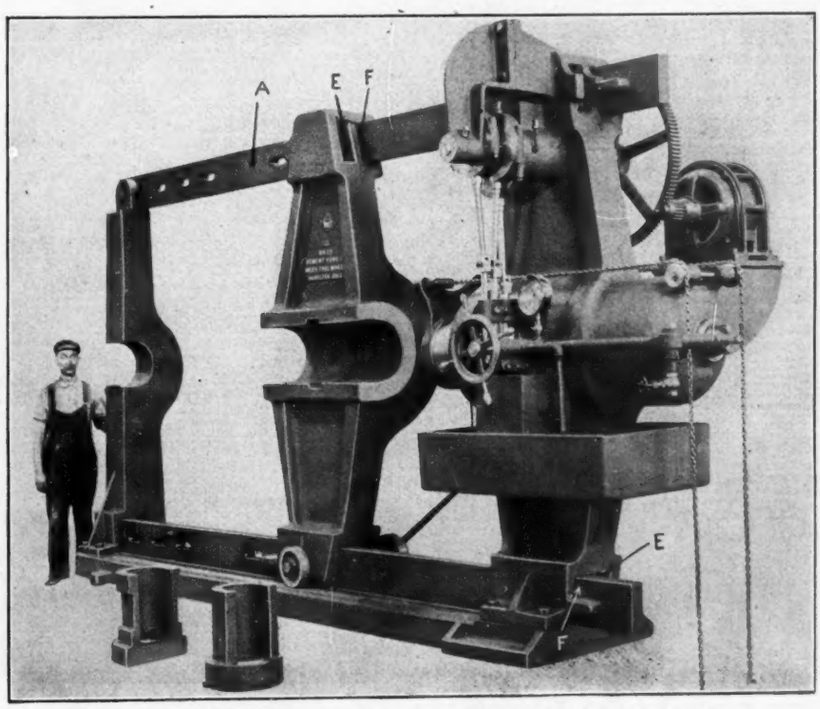


FIG. 1—A COMBINATION INCLINED AND VERTICAL CAR WHEEL PRESS

Illinois as a Coke State

A tremendous increase in the output of coke in Illinois is recorded in a bulletin issued by the Geological Survey In 1910, the total production in that state was 1,514,504 tons, an increase of 237,548 tons or 18.6 per cent over 1909 and more than four times the output for 1908. Illinois now ranks fourth among the coke-producing states. This prominence has been attained through the construction and operation of 200 Semet-Solvay by-product ovens at South Chicago and 280 Koppers regenerative coke ovens at Joliet. The value of the product increased from $5,361,510 in 1909 to $6,712,550 in 1910, a gain of 25.2 per cent. The average price per ton advanced from $4.20 to $4.43.

The Davis-Bournonville Acetylene Development Co. and the National Pneumatic Co. have appointed the Davis-Bournonville Co., New York City, their exclusive selling agent for welding and cutting apparatus. The business of the Davis-Bournonville Co. will be divided into the eastern department with offices at 90 West street, New York City, and the western department, with offices at 515 Laftin street, Chicago.

Layout of a Model Plant for Building Planers

General Arrangement of the Departments of the Works of the Cincinnati Planer Co. by Which Great Economies Are Effected

The plant of the Cincinnati Planer Co., at Oakley, Cincinnati, very well illustrates the present day tendency toward better shop construction for the physical comfort of the men and the reduction of shop manufacturing cost. The shop consists of one building, 400 feet long and 140 feet wide. It differs from most machine tool plants in that it does not have a saw-tooth roof. The roof is built of two side slopes over the two side bays of the shop and a main, central monitor roof with sloping windows along its entire length. Fig. 1 shows the main bay lighting.

The skylights along the ridge of the roof and on both sides of the main bay give a uniform distribution of light over the entire main bay floor. As shown in Fig. 1, the side skylights are set at an angle of about 45 degrees. Fig. 2 is a section of the south end of the main bay taken from the shipping department. At *A* is a section of vertical windows placed in the side of the main bay roof to aid in ventilating. There are three of these sections with four windows to a section on each side. The sash swings in at the top. During the summer months the rows of skylights are whitewashed to exclude the glare of the sun.

In the ridge skylights are placed circular ventilators, while between the skylights, large, square ventilators are spaced at regular intervals in the roof of the main bay as at *B*, Fig. 1.

The shop has a main aisle 50 feet wide and two 45-foot side bays, all one story high, and built of brick and steel. Two Alliance cranes, 15 and 20 tons capacity, respectively, serve the main bay, while a five-ton Pawling & Harnischfeger crane is in operation in the west bay in the small planer department and a three-ton, floor-controlled, Shepard crane commands the east assembling bay. In the front end of the shop is a depressed railroad spur of sufficient length to accommodate two freight cars, and so located that both cars can be loaded or unloaded at the same time by the use of the large cranes in the main aisle and the five-ton crane in the west bay. This railroad track is used mainly for shipping finished machines. On the west side of the building, extending its full length, is a second spur used for receiving castings and raw material in carload lots. The casting storage yard, Fig. 3, is located in the rear of the plant and is served by a 10-ton Cleveland electric crane which travels over the spur track and across the full width of the building. Planer beds and all large castings are stored in this yard. From this casting storage three lines of industrial track extend into the rear of the shop.

As shown in the plan, Fig. 8, the lathe department receives its raw material and castings on trucks over the industrial track from the casting yard. The various boring lathes and mills are arranged near the entrance. The castings are first bored and rough-turned and then are delivered to the various smaller lathes for finishing. Adjacent to the lathe department are the automatic and screw machines, with the gear and milling departments and stock and polishing departments in the center of the bay and the small assembling departments for rails, head, etc., at the opposite end of the shop. In the main bay and the west side aisle are the large and small planer departments, with the drilling department in the center and the large

FIG. 1—VIEW OF THE MAIN BAY OF THE CINCINNATI PLANER CO.'S PLANT, SHOWING TYPE OF ROOF CONSTRUCTION TO INSURE AMPLE LIGHT

FIG. 2—ANOTHPR VIEW OF THE CINCINNATI PLANER CO.'S SHOP, SHOWING VENTILATING WINDOWS IN THE SIDE MONITOR

and small erecting floors at the south end of the shop next to the shipping tracks.

The machine tools are driven in groups, each department with its own motor, the line shafts being erected in sections so that each department is independent of all the others. All the motors are mounted on concrete piers on top of which they are set on six-inch wood bases. The motors are raised from the floor a height of about three feet, making them easily accessible and protected from injury. The floor of the entire shop is built of six inches of concrete on eight inches of cinders, in which are embedded creosoted sleepers. The whole is covered with a coat of tar on which is placed two thicknesses of wood, two inches thick. The heavy machines are placed on concrete foundations brought up in separate columns for each machine, while the lighter tools are placed directly on the floor.

All heavy machines are commanded by overhead cranes. A section of the small planer department is shown in Fig. 5. All but three of these planers are driven from the group line shafts. As shown in the illustration, the planer housings are placed just inside the columns of the side bay with

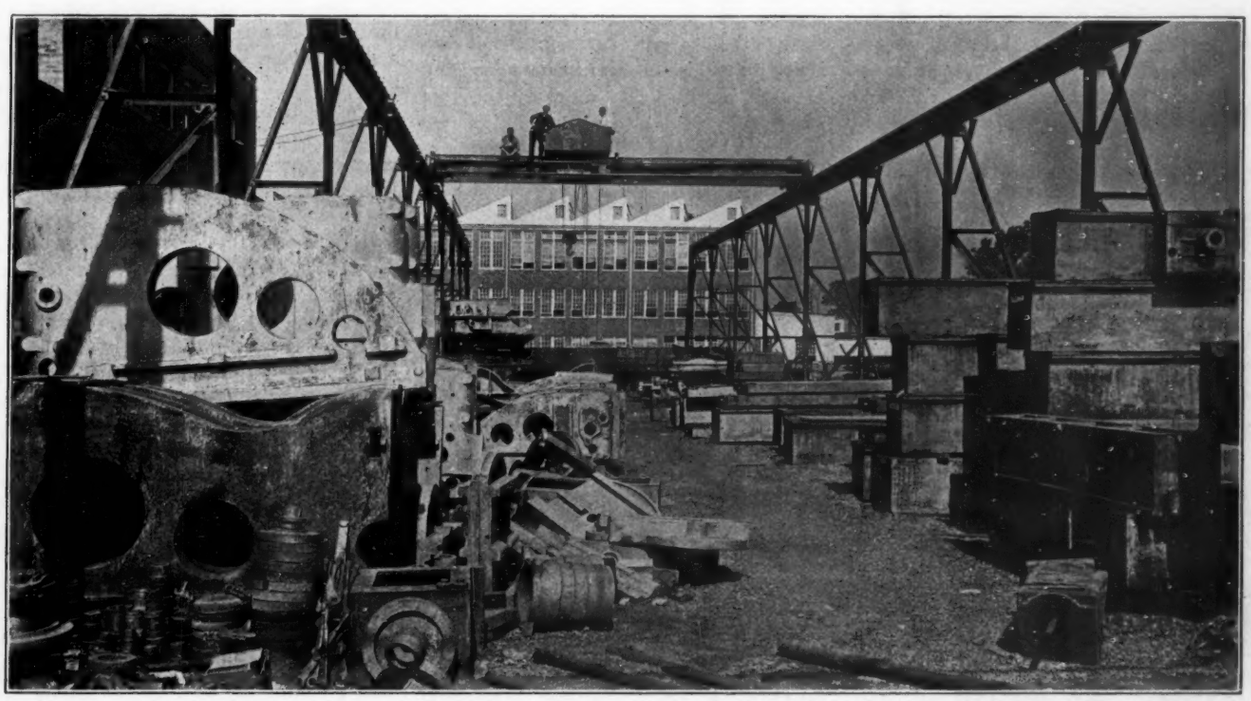


FIG. 3—STORAGE YARD FOR CASTINGS WHICH IS COMMANDED BY AN ELECTRIC TRAVELING CRANE

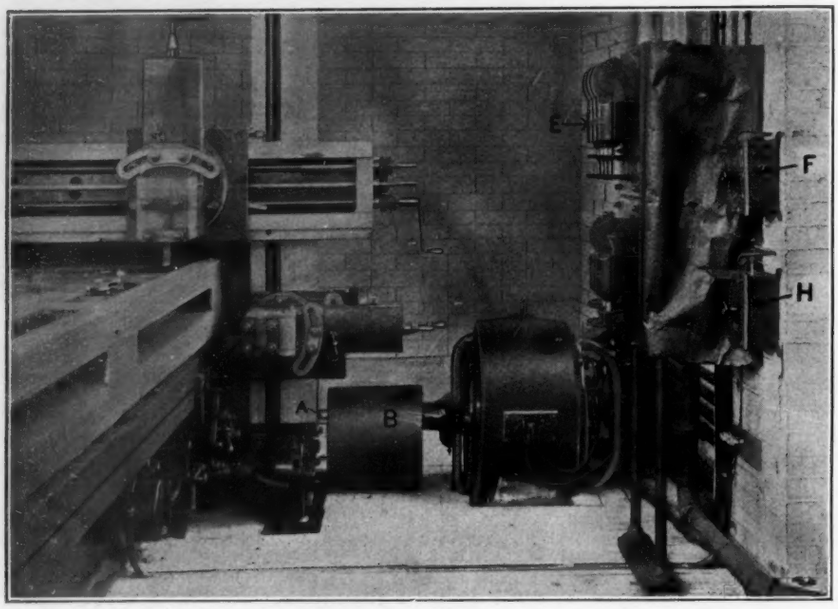


FIG. 4—REVERSING MOTOR APPLIED TO A 72 x 32 x 32-INCH PLANER

the beds extending into both the side aisle and center bay. This arrangement permits the cranes in the main aisle to serve the planers. The motors for driving this department are placed back of the planers and drive to a main countershaft directly overhead. The first planer is driven by a variable speed individual motor, *B*, mounted on top of the planer housing. A starting and control board for this machine is placed at *A*, where it is convenient for the operator and out of the way of all work on the planer or on the floor.

Considerable attention has been given in this shop to perfecting a reversing motor drive for application to planers. Fig. 4 shows a 56 x 72-inch planer with a direct current reversing motor directly coupled to the pulley or driving shaft. The coupling eliminates all pulleys, shifting mechanism, belts and overhead equipment. In Fig. 4, *A*, is the driving shaft; *B*, the shield covering the coupling; *C*, the motor and *E*, the reversing and controlling mechanism used in operating the planer. Instead of the belts shifting and reversing the pulleys, the motor is automatically stopped, reversed and started as quickly as with the ordinary belt shifter. This is accomplished by changing the direction of the current through the motor. The direction of the current passing through the motor is reversed by a transfer switch connected with the shifting mechanism of the planer, so that the table dogs throw the switch, reversing the current through the controllers instead of shifting the belts as with the line shaft-driven planer; *F* and *H* are two rheostats operated by hand and connected with resistance coils in the fields of the motor. The upper rheostat, *F*, controls the cutting stroke for which speeds, varying from 25 to 60 feet per minute, are obtainable. The lower rheostat, *H*, controls the return stroke and provides for return speeds from 50 to 100 feet per minute. The rheostats are stationary and remain set for any speed, and through them any cutting and return speed within the limits of the planer is instantly available.

With this drive a smaller motor is used than when a reversing motor is placed on top of the planer, as there is less fly-wheel inertia to overcome, which reduces the current consumption and the wear on the driving mechanism. The planer can be run on a six-inch stroke almost continuously without over-heating the motor. Instead of the usual elevating device in the top planer housings, a small, separate motor with a double pole switch is used. One side of the switch elevates the rail and the other side lowers it. This does away with all belts on the planer. With this method of motor drive, the motor can be placed on the right or left side of the planer. Another planer in this department has the motor placed lengthwise of the planer, to save floor space. The motor is attached to the planer driving shaft through a pair of bevel gears.

Fig. 6 shows a 76 x 32 x 32-inch planer in the large planer department in the main aisle. This planer is driven by an individual 25-horsepower motor and is set at an angle with the length of the bay. This is done to allow the table of a second planer of the same size to pass up alongside the bed, to within six or eight feet of the housing. This saves considerable space in the operation of these large planers which cannot be placed crosswise of the shop due to their extreme length. This large planer is served by the traveling cranes in the main bay and is used for planing large beds only. A small jib crane, hand-operated, aids in removing jigs, etc., from the work. As it is necessary to have all planers set absolutely level at all times, they are regularly tested with a very sensitive, special, spirit level, once every three months. At intervals, under the length of the beds of all planers, are placed leveling blocks as indicated at *A*, Fig. 6. This block consists of two beveled blocks sliding on each other and actuated through a set bolt, *B*, which is adjusted with a wrench. By the use of these leveling blocks any low points in the bed as indicated by the level, are raised to line up with the rest of the bed.

Fig. 7 is a section of the drilling department showing the location of the

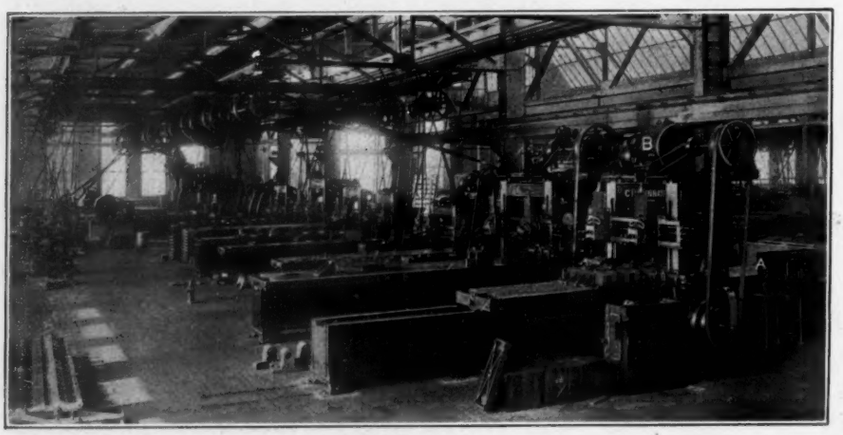


FIG. 5—A SECTION OF THE SMALL PLANER DEPARTMENT, SHOWING THE LOCATION OF THE PLANER WITH THE HOUSINGS PLACED AS CLOSE AS POSSIBLE TO THE COLUMNS

large drills in the main aisle at the right and the gang drills and small drills at the left in one of the side bays. Only one countershaft is used and this is hung from the I-beam columns supporting the side bay. The drills are belted right and left from the countershaft. The motor, driving this shaft section, is placed close to an I-beam column on a concrete foundation.

In the stock room iron racks are used for holding the bar steel and each lot and each piece when of odd length, carries a tag on which the name of the stock, its size and carbon content are plainly marked. This avoids much measuring and delay sometimes encountered in locating the required stock.

All spur, bevel, and miter gears are cut on automatic machines. The driving mechanism of a planer being the most important part of the machine, each driving gear is cut by a special cutter. After the teeth have been roughed-out, the cutter is set to the correct pitch diameter by a standard gage used only for that purpose. The table rack is cut with a special cutter and is tested and matched in this department with a large spur gear of corresponding pitch.

Milling work throughout the shop is done by jigs. Gears, pulleys and shafts are key-seated in the milling department. For milling the cams on the shifting device of the planers, a novel jig is used, which is clamped to a master cam mounted on a slide. The master cam is held by a weight against a roller which is operated by worm gearing and a handle, and rolls the master cam and casting to follow the curves and angles of the master cam. The master cam is twice the size of the casting to reduce the error of inaccuracy to a minimum.

Jigs are used universally in the drilling department. For drilling beds, tables and housings, boring bars centered in jigs are driven by knuckle joints to eliminate side thrust and insure a perfect alignment for the boring bar. Three test shafts for running off the finished machines are placed in the large and small planer assembling departments. In the assembling department very little fitting or scraping is done as it is the aim of the shop to reduce the time that any machine is on the assembling floor to as low a figure as possible. Great care is exercised in planing beds and housings to get them true. After the preliminary planing down to nearly the finished size, the parts are laid away to season for as long a time as possible. Then the final planing is done and the only hand-scraping necessary is the removal of the loose metal. Beds and housings are tested for accurate alignment with a right angle level having a refinement that indicates an error of 0.0001 inch in a distance of four feet. The machine is finished by taking a cut off the table on its own bed and finishing the T-slots to standard plugs. In the building of planers in this plant, all work that can possibly be handled on a planer is done on the planers instead of being milled. It has been determined, by actual test on some parts, that the total time for milling and scraping work exceeds the total time for planing and scraping the same work, by as much as 25 per cent.

FIG. 6—LARGE PLANER SET AT AN ANGLE TO PERMIT THE TABLE OF THE OTHER PLANER TO PASS CLOSE TO THE HOUSING OF THE FIRST PLANER

The general policy of the plant is to manufacture all parts for stock, as far as is possible, and to requisition the parts from stock as needed. The rails, feeds and heads are all built and assembled complete before being taken to the erecting bays.

The plant is heated by a hot water system and is lighted throughout with Cooper-Hewitt mercury vapor lights. Heat, light, power, compressed air and water are, in common with the Oakley factory colony plants, supplied from a central power station. Sanitary

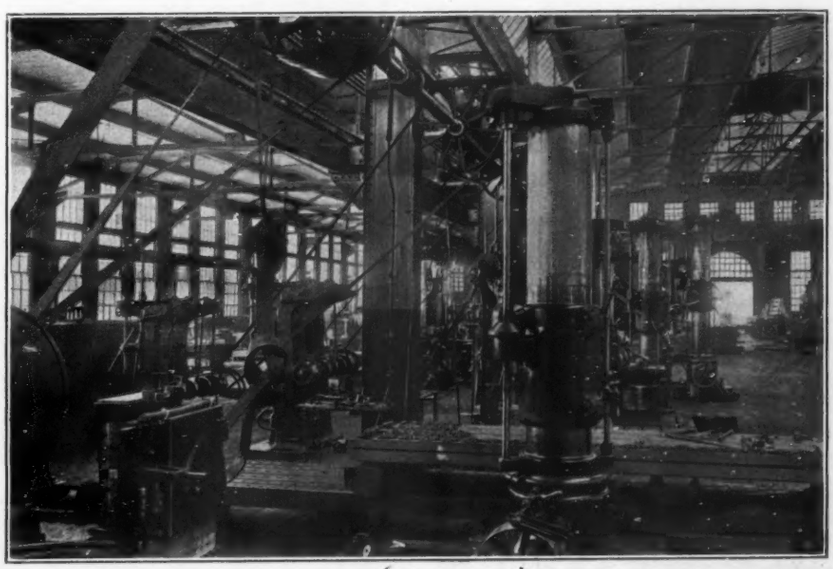


FIG. 7—A VIEW OF THE DRILLING DEPARTMENT, SHOWING THE RIGHT AND LEFT HAND BELTING OF THE DRILLS WITH LARGE DRILLS IN THE MAIN BAY AT THE RIGHT AND GANG DRILLS UNDER THE WEST BAY AT THE LEFT

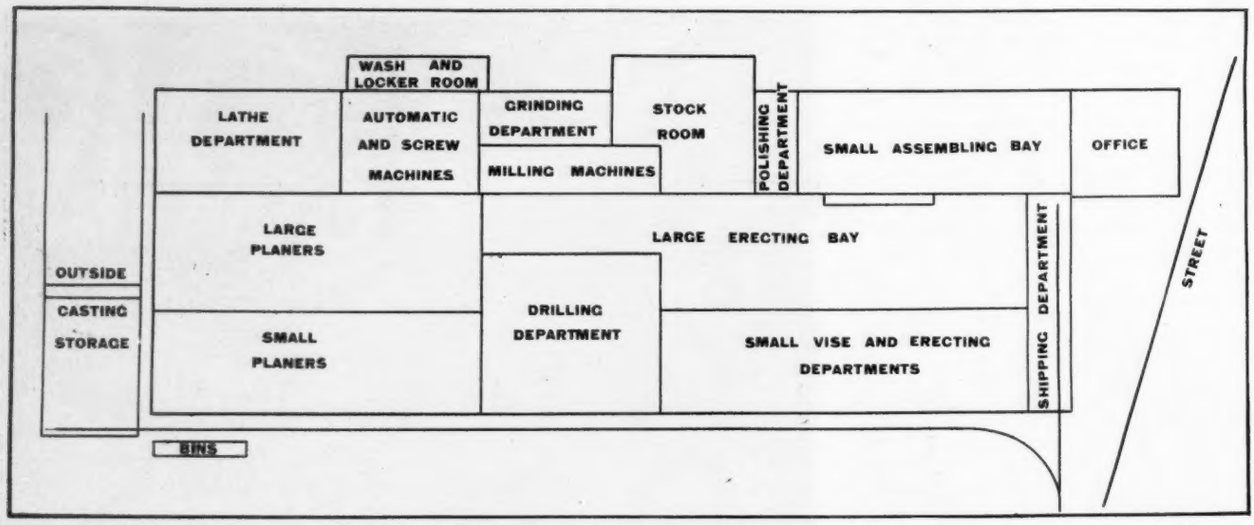


FIG. 8—DIAGRAM WHICH SHOWS THE ARRANGEMENT OF THE DIFFERENT DEPARTMENTS OF THE CINCINNATI PLANER CO.'S PLANT

drinking fountains are used exclusively. The locker and toilet rooms with accommodations for 250 men, are placed in an extension outside the main building to avoid obstructing the shop proper.

In laying out the shop the machines were all carefully located to avoid reverse movements of the work in passing from one end of the shop to the other, while in process of manufacture. The shop was built to cover the machines rather than the machines to fit the shop. The lighting and roof construction is patterned after an old German model on the design of Mr. Quillen, general manager of the company. The designs were carried out by Bert J. Baldwin & Co., mechanical engineers, Cincinnati.

British Trade Improves

Nearly all the principal industries of Great Britain showed an improvement during the year ending May, 1911, as compared with the year previous. Returns from firms employing 452,990 workmen showed an increase of 5.7 per cent in the amount of wages paid compared with a year ago. The principal increase affected 2,200 iron ore miners and blast furnace men in North Lincolnshire, 3,700 steel melters, coal miners, etc., in various parts of England and Scotland, 12,000 iron molders in Scotland, and 33,000 workmen in the engine and boiler shops on the Clyde.

The total number of workers engaged in labor disputes in England during the month of May, 1911, was 36,868, and resulted in a loss of time amounting to 523,800 working days, 11,400 more than in April, 1911, and 318,800 more than in May, 1910.

Large Punch and Shear

The large punch and shear shown in the accompanying illustration, was recently built by the Cleveland Punch & Shear Works Co., Cleveland, for installation at the Lorain, O., works of the National Tube Co. The machine, which is of the regulation Cleveland type, weighs 52,000 pounds and is operated by a 15-horsepower, 220-volt, direct current, Westinghouse motor which runs at a rate of 725 revolutions per minute. The latter is mounted overhead and is belted to the crown fly-wheel, the slack being taken up by means of a belt tightener. The frame of the machine, which is of semi-steel, is of the solid frame type. The throat has a depth of 36 inches from the center of the plunger to the back of the gap.

The main shaft is of forged steel while all bearings have bronze bushings. The main gear and pinion are of steel with cut teeth and the clutch is also of steel with automatic positive clutch release. The plunger is of steel with bronze taper gib for adjustment. The pintle, also of steel, is of the oscillating type and is bushed at all bearing points. The cover plate is gibbed and tongued to withstand side and vertical thrusts. The machine is equipped with all attachments necessary for punching and bar and plate shearing. It has a capacity for punching a 3-inch hole in a 1½-inch plate and can shear 3½-inch round bars, 1½ x 10-inch flat bars, 1½-inch plate and an 8 x 8 x ¾-inch angle.

The safety devices which form part of the construction were approved by the safety appliance board of the United States Steel Corporation and are of interest to all users of such machines. All gear teeth are com-

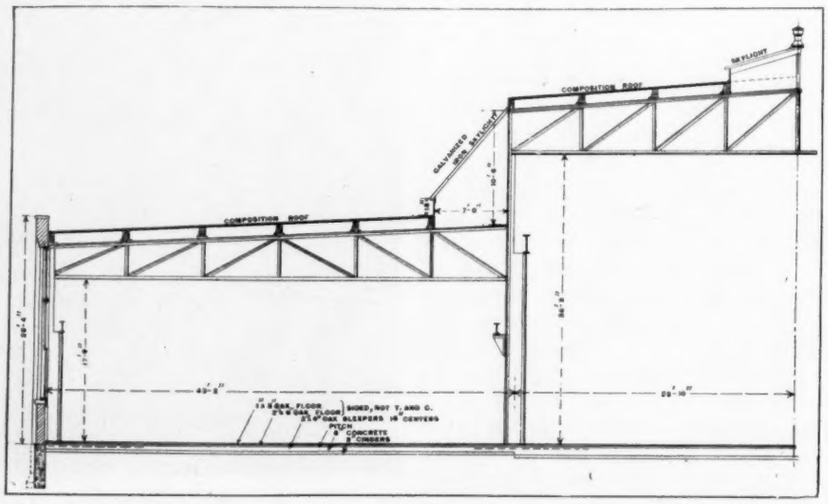
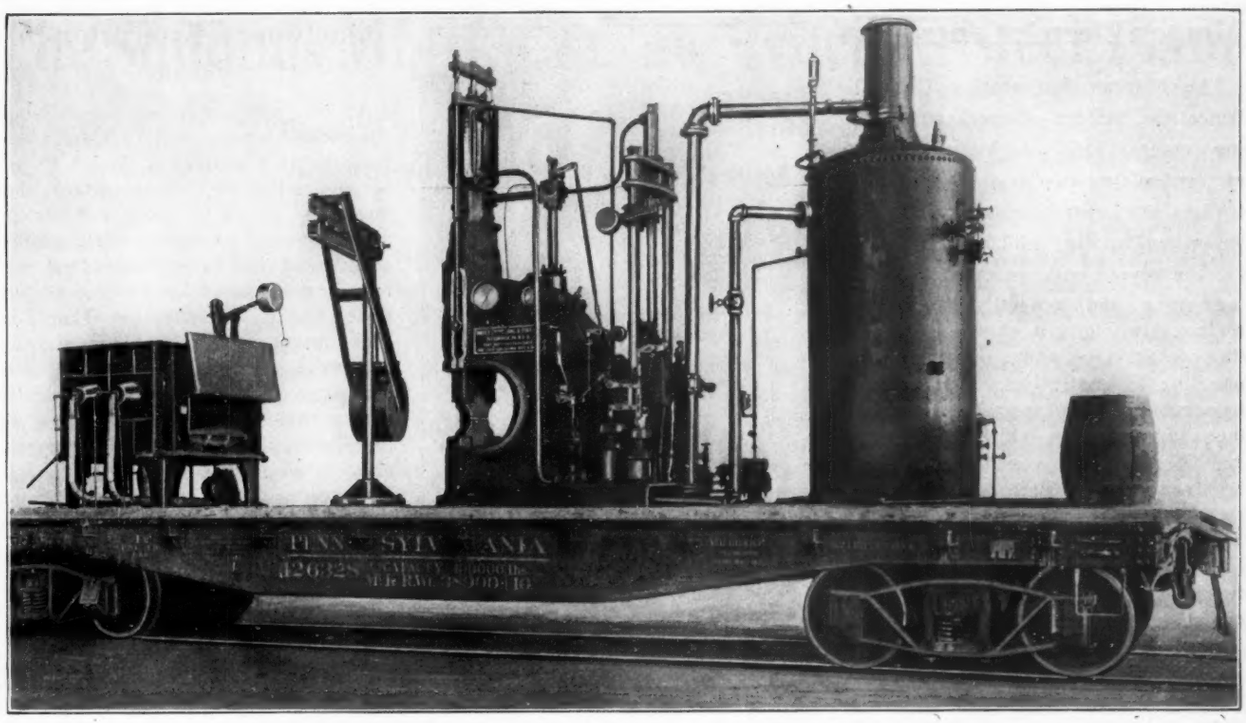


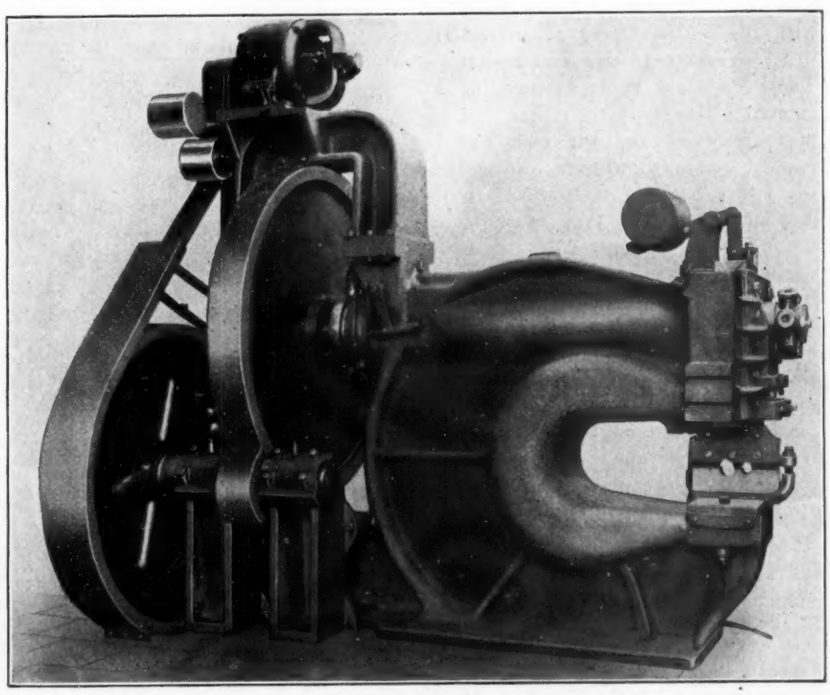
FIG. 9—HALF CROSS-SECTION OF THE CINCINNATI PLANER CO.'S PLANT, WHICH SHOWS THE ROOF CONSTRUCTION WITH SLOPING WINDOWS



COMPLETE FORGE PLANT MOUNTED ON A FLAT CAR

pletely covered by a heavy steel channel which is shaped to conform to the circumferences of the gear wheel, fly-wheel and the pinion. The spokes of the fly-wheel and gear are covered with steel plate, making it impossible for a workman to entangle himself, or anything else he carries, in the mechanism. The belt connection at the motor is left unprotected, but this is at such a distance from the floor that it is out of reach of the workmen. The capstan, with which the shaft can be turned by hand, is of the safety ratchet type which makes accidents through its use impossible.

Defective wiring caused a fire that recently damaged the pattern shop of the Murphy Iron Co., Detroit. Not a very large loss was sustained.



LARGE CLEVELAND PUNCH AND SHEAR EQUIPPED WITH SAFETY DEVICES

Forge Plant Mounted on a Flat Car

At the recent exhibit held at Atlantic City at the time of the convention of Railway Master Mechanics and the Master Car Builders' Association, a unique display made by the United Engineering & Foundry Co., Pittsburg, attracted considerable attention. This consisted of a complete forge plant mounted on a flat car, as shown in the accompanying illustration, which is a view of the equipment before the house was built over it. The plant derived its power from a 40-horsepower boiler and the other equipment included an oil furnace, crane and a 150-ton high speed forging press built by the United Engineering & Foundry Co. Forgings were made up to 6 inches in cross-section and throughout the period of the exhibit it was clearly demonstrated that the press could operate without shock or jar, although it had no other support than the wood car floor. Another point demonstrated was the economy of the press in steam used. When drawing its supply from a large boiler or battery of boilers it would not exceed 15-horsepower and the 40-horsepower boiler, which was a part of this equipment, also furnished steam to a neighboring exhibit. The press is self-contained, no other hydraulic equipment being necessary.

Morgan Electric Controllers

The Morgan Engineering Co., Alliance, Co., builder of overhead traveling cranes, steel works equipment, etc., is building two new lines of controllers for operating reversible, series wound motors which are designed for the severe requirements of traveling crane and general rolling mill service. In Fig. 1 is shown a view of the contact face and contact arm of one line of controllers. The contact face consists of a special, heat-resisting composition in which are embedded the frames to which the contacts are secured. No slate is used in the face plate. The copper contact plates are fastened to the frames by plugs and screws. These contact plates are reversible and can be renewed without disturbing any other part of the controller. The contact arm embodies the features of simplicity and strength. It is composed of few parts and great care has been taken to insure thorough insulation. The contact fingers are of such form as to seldom require replacement and are connected by suitable shunts so as to take the heavy current. The controller can be arranged for carbon brushes when preferred. The magnetic blow-out is placed on the central hub of the frame and is so arranged as to give the greatest blow out effect when the circuit is ruptured.

The controller frame is a rigid iron casting which carries the face plate and the resistance banks. The back

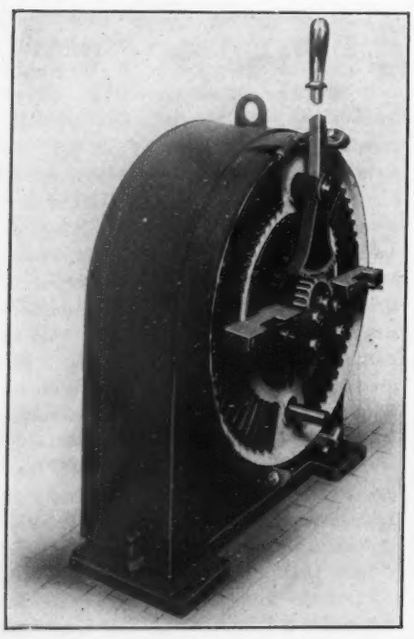


FIG. 1—ELECTRIC CONTROLLER, SHOWING CONTACT FACE AND CONTACT ARM

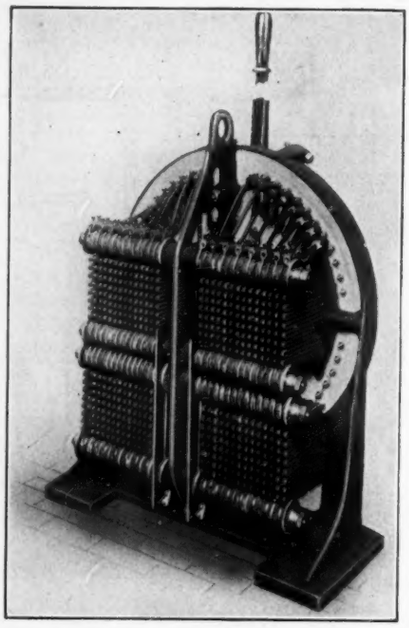


FIG. 2—ELECTRIC CONTROLLER WITH CAST GRID RESISTANCE

of the controller carrying the resistance is covered by a sheet iron case to protect the grids from dirt and accident. The resistance can be either of cast iron or the wound coil type. In Fig. 2 is shown the cast grid resistance type of controller and in Fig. 3 the wound coil type. The cast grids are made of a special composition of iron having physical and electrical properties, especially adapted for this purpose. The wire connections are on top and are readily accessible. In some cases, especially with the smaller sizes of controllers, it is necessary to use coil resistance. These coils are made by winding alternating layers of resistance and asbestos ribbons and the coils can be readily removed without dismantling the entire bank of resistance. In the cast grid resistance type of controller the grids are connected by means of copper jumpers which are thoroughly insulated to prevent short circuits. The controller is operated by a single handle with forward and reverse motion. Where safety requirements demand it a safety cover for the face plate to prevent any possible damage from the flash and to cover all live parts of the face plate is provided.

The other type of controller built by the Morgan Engineering Co. is made with external resistance, while the controller illustrated is of the self-contained type. These controllers are built in three sizes as follows: One to 10-horsepower inclusive; 11 to 50-horsepower, inclusive and 51 to 100-horsepower, inclusive.

Machinery Exposition in Persia

At the convention of the Persian-American Educational Society, held recently at Washington, D. C., it was recommended by the secretary that means be found to interest American manufacturers of agricultural, mining, textile and other appliances and machinery, to open an exposition of their wares at Teheran. The Persian market appears to present an attractive opportunity to American manufacturers for introducing and cultivating trade in different products, especially machinery. About six months ago, through the aid of the bureau of manufactures, the Persian-American Educational Society was placed in touch with American makers of farm implements and other devices. In a letter from the society to the bureau, it is stated that as a result of this offer, there are now being formed in Tabriz commercial societies for the purpose of ordering agricultural machinery, descriptions of which they have seen in the catalogs sent to them during the past three months.

The Miami Valley Machine Tool Co., Dayton, O., has improved its No. 1 universal tool and cutter grinders and plain cutter and reamer grinders, by the addition of a tool shelf which affords space for holding work and also serves as a rack for storing all attachments for the machines. The general design of these machines, however, remains unchanged.

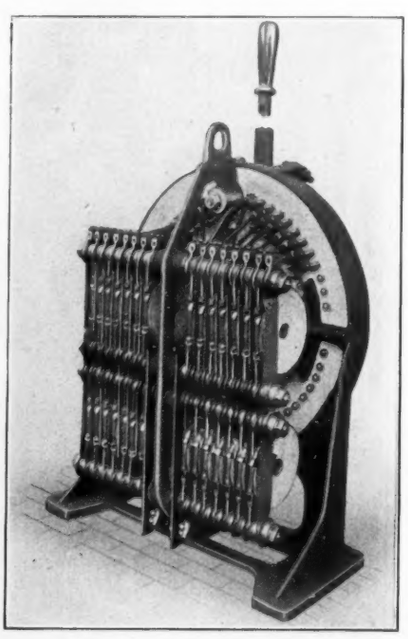


FIG. 3—BACK VIEW OF CONTROLLER ARRANGED FOR COILED RIBBON RESISTANCE

The Simonds Mfg. Co.'s New Crucible Steel Plant

General Arrangement of These Works With a Description of the Melting and Rolling Equipment

The Simonds Mfg. Co., maker of saws and machine knives of all descriptions, with manufacturing plants at Fitchburg, Mass., Chicago and Montreal, has. during the past year, built and equipped at Lockport, N. Y., an extensive crucible steel plant for the production of its own special quality of crucible steel, in sheets, shapes and bars to be furnished to and used by its several finishing plants. The principal portion of the new plant has been in operation for several months, the first steel having been rolled on Jan. 2, this year. In 1900 the Simonds company first began the manufacture of steel by building a plant in connection with its Chicago factory. In ten years the steel requirements of the company had outgrown the capacity of this original Chicago steel mill, and it was decided to find a suitable location, conveniently accessible from all three of the plants and to build an entirely new steel plant.

Selection of Site.

Lockport, N. Y., was selected as the location of this new steel-making plant for the reason that it was about midway between the three finishing plants and possessed exceptionally good transportation facilities by rail and canal and practically unlimited Niagara power procurable under contract for a long term of years and was also a good labor market on account of the large number of varied industries centered there.

There are 80 acres in the site acquired by the company, located just west of the limits of the city, contiguous to the Erie canal and on the lines of the New York Central and Erie railroads, and the Buffalo, Lockport and Rochester Electric railway. The buildings of the plant, with the immediate yards, cover approximately 14 acres. The accompanying ground plan of the plant, shows the arrangement of the buildings and equipment. The buildings are seven in number and include a gas house, melting shop or furnace building, rolling mill, finishing mill, band saw mill, transformer and electric power building, and a laboratory and office building. All of the mill buildings are of structural steel construction and corrugated, galvanized iron siding with cement tile roofs and ample windows; the gas house has a portion of its exterior walls of brick and the transformer and power house are entirely of brick with steel girder and concrete roof and concrete floor. The office building is of structural steel and brick with concrete floors and roof. All the finishing mills have saw-tooth roofs with northern exposure for the glass side, providing proper lighting to secure the extra fine finish and strict inspection, which every saw plate must receive before it leaves the steel mill.

Producer House.

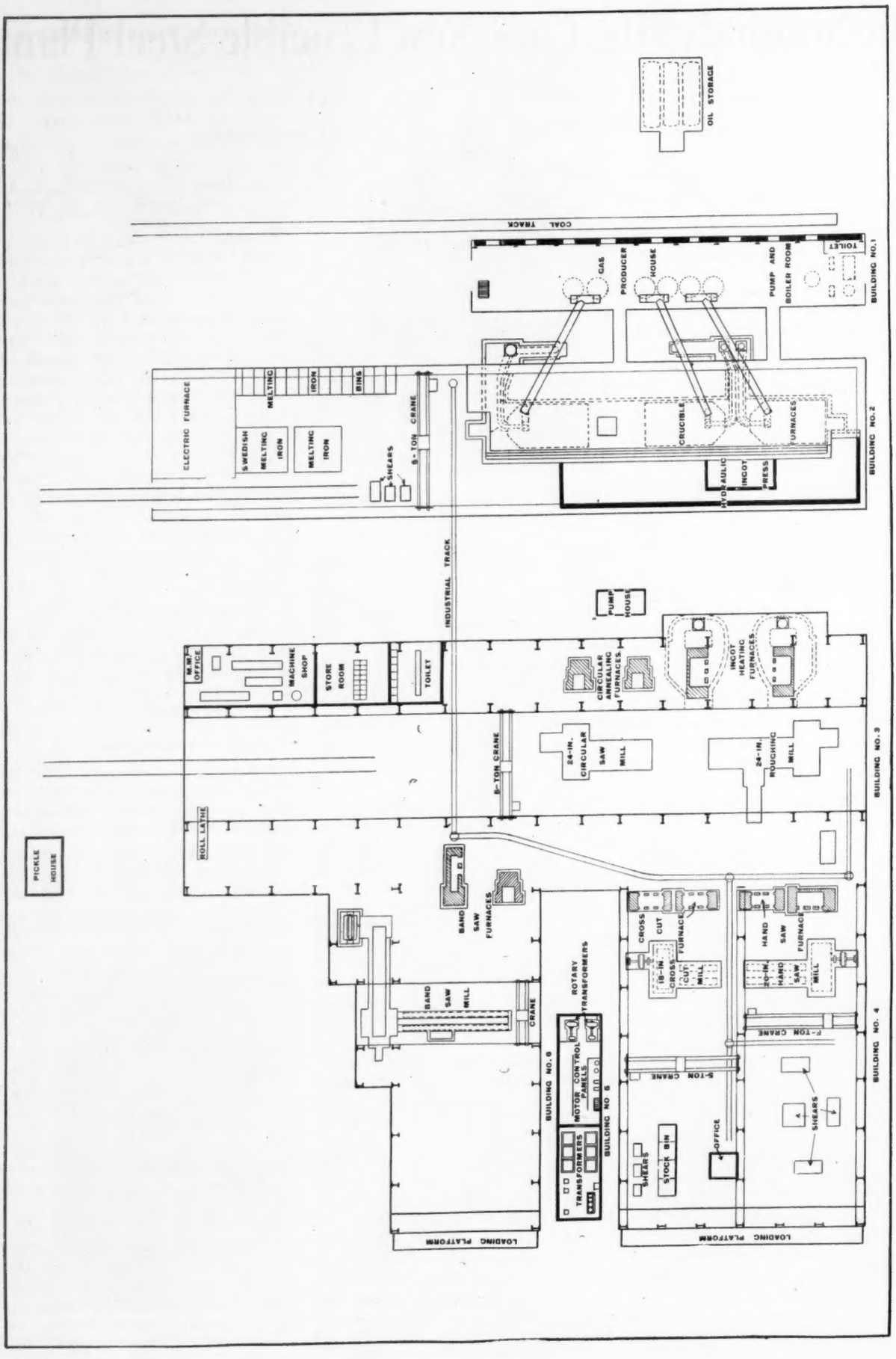
Building No. 1, designated as the gas house, is 30 x 178 feet and contains the gas producing system, which is comprised of six Swindell, Siemens gas producers. It also contains the necessary coal storage bunkers and conveyors. Pittsburg gas coal of high unit heating quality is used for the generating of producer gas. The gas house also contains one 250-horsepower Cahall boiler used for producing steam for heating the plant, for driving the hydraulic pumps, serving the oil-burning apparatus, etc.

Adjacent to, but completely outside of the gas building is the system of fuel oil storage tanks, consisting of three 10,000 gallon tanks, located in a separate fireproof building, which is partly below the surface of the ground. These tanks were designed and constructed by the Hydraulic Oil Storage Co., Detroit, and embody the principles of this company's system of storing oil by floating it on water, whereby the oil is cleaned of all impurities by sedimentation. This system has proven very successful in obtaining satisfactory heat regulation, due to the absence of dirt in the burners. From these storage tanks, the oil is delivered to the lines leading to the furnace burners by a triple-plunger, single-acting pump, motor-driven, and maintaining a pressure of 60 pounds at the burners. The lines carrying the oil to the furnaces are carried underground in steam logs, steam pipes being carried in the same log, with the oil pipes to insure necessary fluidity. This method was developed by the American District Steam Heating Co., Lockport, N. Y., and is used largely for its underground heating systems.

Building No. 2. designated as the melting shop, is 325 x 65 feet and contains the crucible melting furnaces. The present furnace equipment consists of three, 30-pot Swindell crucible furnaces of the Siemens type. The crucibles hold about 100 pounds of metal each. From each individual heat of the melting furnaces a sample of steel is taken and sent to the laboratory for testing and upon approval of the laboratory, the ingots are passed to the cogging mill, in building No. 3 or delivered to stock to be used as required. Building No. 2 also contains a small electric furnace of the Girod type, which is now being run experimentally. The north end of Building No. 2 is served by a five-ton, Alliance, electric crane between the bins and furnaces. Here are located the scrap and muck iron shears, the melting iron storage scrap bins, etc. Swedish iron is extensively used in the steel mixtures.

Rolling Mill.

Building No. 3, designated as the rolling or cogging mill, is 314 x 110 feet. In it are located the cogging mill, where, after reheating, the ingots are rolled into sheets; the circular saw finishing mill, the shears for cutting the cogged sheets to length for finishing, etc. The cogging mill consists of one stand of 24 inches roughing rolls, and one 30-inch edging stand. This mill is gear-driven by a 300-horsepower General Electric, 3-phase, 440-volt motor, the drive having been built, as were all drives for the mill, by the Mesta Machine Co., Pittsburg. The cost of power here and throughout the mill is $18 to $19 per year per horsepower. This mill is served by two furnaces built by William Swindell & Bros., Pittsburg, the hearth of each being approximately 18 x 6 feet. Crude fuel oil is used for fuel. The furnaces are of the regenerative type. The cogging mill is also served by a special lifting table, operated by hydraulic power, at a line pressure of about 600 pounds. The screw-down mechanism is of special design, motor-driven, controlled by a master switch, at a



GROUND PLAN OF THE SIMONDS MFG. CO.'S NEW CRUCIBLE STEEL PLANT AT LOCKPORT, N. Y., SHOWING THE GENERAL ARRANGEMENT OF THE BUILDING AND LAYOUT OF EQUIPMENT

point convenient to the operator, the automatic motor-controlling apparatus being located in the sub-station or power house. The circular saw plate finishing mill consists of two stands of 24-inch rolls driven by a 300-horsepower, three-phase, 440-volt General Electric motor, gear-driven. This drive was also furnished by the Mesta Machine Co. The finishing mill is served by two oil-burning furnaces of special design, built by William Swindell & Bros.

After leaving the cogging mill, the cogged sheets go to the blocking-out shear, where the sheets are cut to length for finishing into saws of various sizes. No. 3 building is served by a 15-ton electric crane built by the Cleveland Crane Co. In No. 3 building is also located the machine and roll turning shop for making necessary repairs to shop machinery; store rooms for the mill supplies and toilet rooms for the shop employes, which are fitted up with ample and convenient toilet facilities including shower baths, hot and cold water, etc., and with a locker department. An artesian well has been driven, which furnishes an excellent quality of clear and cold drinking water. The well is served by a motor-driven pump delivering the water at the several points in the mills and office where required for use.

Finishing Mill.

Building No. 4, the finishing mill, is 154 x 110 feet of steel frame, saw-tooth roof construction. It contains the hand saw and cross-cut finishing mill. The hand saw mill consists of one set of 3-high rolls and one stand of 18-inch finishing rolls, with provision for one or more additional stands of finishing rolls, and produces the sheets from which the blanks for hand saws are made. This mill is driven through gears by a 200-horsepower Westinghouse 3-phase, 440-volt motor and is served by two oil burning furnaces of special design built by Wm. Swindell & Bros.

The cross-cut finishing mill at present consists of two stands of 18-inch finishing rolls with a drive similar to that of the hand saw mill. The motor is a duplicate of the one operating the hand saw mill. Provision is also made on this mill for the addition of one or more finishing stands. In addition to the finishing mills the building contains miscellaneous shears for cutting plates to shape, scrap shears for cutting miscellaneous scrap to make it convenient for handling and other equipment. The building is equipped with two five-ton floor-operated cranes built by the Alliance Machine Co.. Alliance, O.

Building No. 5, band saw mill, is also of steel frame, saw tooth roof construction, and is 105 x 65 feet with a bay about one-half its length on the north side in which are located the rope drive, motors, etc. The building contains the band saw mill, which is of special design and is operated by rope drive; both mill and drive were furnished by the Mesta Machine Co. The motor for this mill is of special design and was built by the Allis-Chalmers Co., Milwaukee. The mill is served by two furnaces built by Wm. Swindell & Bros. and the building is served by a 5-ton, Alliance crane.

Band Saw Mill.

The transformer sub-station and power house is 98 x 22 feet. one story high. of brick construction with steel girder and concrete roof and concrete floor. Electric power is taken from the transmission lines of the Ontario Power Co. at 12,000 volts from one of that company's sub-stations located about a mile southwest of the plant. This voltage is stepped down through six 500-kilowatt transformers to 440 volts at which voltage it is delivered to the mill motors. The station is equipped with the usual lightning arresters, high tension oil switches, recording meters, etc. In the operating end of the power station is located the automatic motor controlling apparatus. This controlling mechanism is governed by a master switch at each of the mills whereby the mill operator can start, stop or reverse the mill at will. The motor controls for the hand saw and cross-cut mills were built by the Cutler-Hammer Mfg. Co., Milwaukee, while the controls for the cogging mill, circular saw, finishing mill and cogging mill screw-down motor were built by the General Electric Co. Most of the meter equipment, including the graphic recording meters, ammeters. voltmeters, frequency and power efficiency meters were supplied by the Westinghouse Electric & Mfg. Co.

Transformer Building.

In the transformer building are also located two 100-kilowatt rotary transformers built by the Allis Chalmers Co. Each of these consists of one three-phase, 440-volt, synchronous motor and one 100-kilowatt, direct current generator furnishing current to a three-wire system at 220 volts between the two outside wires for the operation of cranes and a few small motors and 110-volt for lighting the works, etc. All of the electric wiring is in underground conduits.

The steel mill office and laboratory, building No. 7, is 45 x 85 feet, two stories high with brick side walls, concrete floors and concrete roof. The lower east half is used for office purposes and the lower west half for the experimental and testing department, equipped with the requisite machine tools for the purpose; a 50-ton automatic and autographic Riehle testing machine and numerous other special testing devices. The equipment of this department also includes several gas furnaces fitted with pyrometers. etc., for experiments in the hardening and tempering of the various steels used in making saws, knives and files. The west end of the second floor of the office building is occupied by the laboratory. The greater part of the laboratory tables and fittings were installed by the Kewaunee Mfg. Co., Kewaunee, Wis., and aside from being models from the point of efficiency present a very attractive appearance. Adjoining the main laboratory is a small room, 12 x 15 feet, used as a balance room and office for the chief chemist. Electrical heating appliances are used quite extensively in this department including electric combustion furnaces for the determination of carbon in iron and steel by the direct combustion method, electric heating rings for crucibles, electric drying ovens, hot plates, etc.

Concrete Sewers.

The east end of the second floor is occupied partly by the drawing room and office of the company's metallurgist and the remaining portion of this end of the building is used as a private laboratory for research and special work. The small laboratory is equipped on the same lines as the larger one and is very complete in its appointments.

All of the sewers in the mills are of concrete construction and are of the open type to permit of ready cleaning, being covered with iron floor plates. The shop sewer system converges to a central dump pit, where the waste water is brought from the low sewers to the high level. It is discharged to the city sewer by a 5-horsepower Worthington, electric-driven centrifugal pump operating on a 440-volt, three-phase current and a 1,000-gallon steam driven centrifugal pump. Provision has also been made for the installation of a second motor-driven unit if found necessary. The cement roof tiling required for the roofs of the plant was supplied by

PORTABLE, ROTARY SAND SIFTER

the American Cement Tile Mfg. Co., of Wampum, Pa.

The plans for the Simonds plant include a bar mill and it is probable that definite steps for the erection of this addition will be taken shortly.

Rotary Sand Sifter

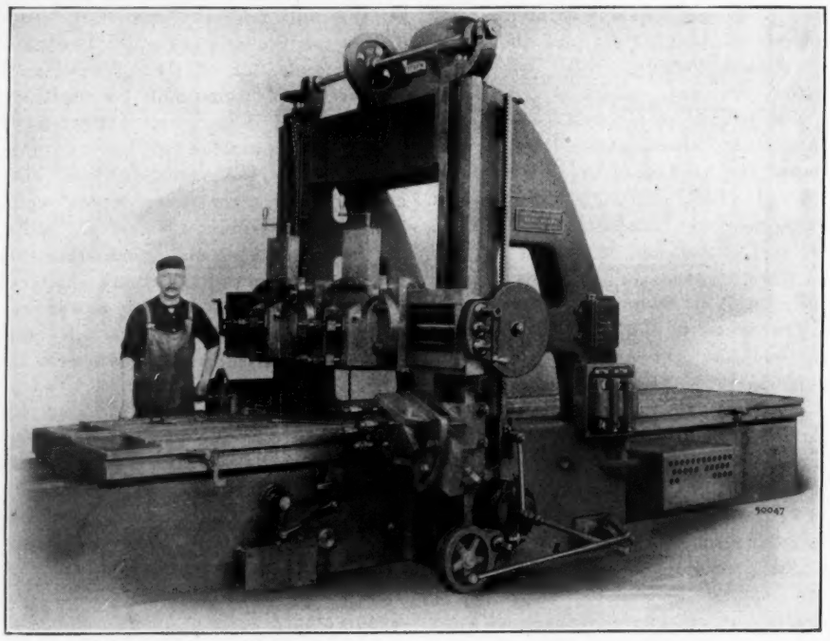
The rotary sand sifter, shown in the accompanying illustration, built by the Arcade Mfg. Co., Freeport, Ill., consists of two wire mesh cylinders, each 30 inches long, the inner cylinder being 14 inches in diameter and the outer cylinder 24 inches in diameter. By means of a series of rollers and lugs, the cylinders are jolted four times during each revolution, thereby breaking the lumps and preventing the sand from clogging the wire mesh and the sand, consequently, passes through the sieve as fast as it can be shoveled into the inner cylinder. The sieve is tilted to carry off stones, iron and other foreign particles which fall into a chute and are discharged at the front end of the machine. The sifter is portable, being mounted on two wheels and a handle is provided for moving the device from floor to floor. The frame is rigidly constructed of steel angles and the cylinders are operated by a compressed air motor, but they can be driven by an electric motor or the machine can be furnished with pulley for belt power.

The Ashton Valve Co., Boston, has declared the regular quarterly dividend of 2 per cent, payable Aug. 15.

Planer With Reversing Motor Drive

In the accompanying illustration is shown a 54-inch planer, equipped with reversing motor drive and planer control, built by the Niles-Bement-Pond Co., 111 Broadway, New York City. This device consists of a specially designed reversing motor connected directly to the driving shaft, thereby eliminating all belts, clutches and gear boxes. The motor drives the table through rack and gearing by positive connections, both reversal and speed variation being obtained by regulation of the motor. The motor can be used only with direct current, and on all sizes of planers above 30 inches, and is mounted on the side opposite the operator. A separate motor is employed for elevating and lowering the cross-rail and this motor, together with the necessary gearing, is mounted on the arch connecting the two uprights. A double-throw switch connects the pilot switch and a pendant switch to the motor driving control, or permits these switches to be used for elevating and lowering the cross-rail or for adjusting the side heads by power traverse. At the instant of reversal, when the pilot is thrown by the dogs on the table, the controller short circuits, the armature through suitable resistance, causing the motor to act as a generator, and consequently as a powerful electric brake on the table. When the speed of the motor has been reduced to a pre-determined amount, the armature current is reversed and the table starts on the next succeeding stroke. This sequence of operations takes place at the end of each table stroke and is entirely automatic.

The controller gives a range of 12 cutting and 12 return speeds, each set being entirely independent of the other. These speeds may be changed while the machine is in operation. The cutting speeds usually range from 24 to 40 feet per minute, and the return speeds from 50 to 100 feet per minute. The pilot switch mounted on the operator's side of the bed and controlled from either side, takes the



A 54-INCH PLANER, EQUIPPED WITH REVERSING MOTOR DRIVE AND PATENTED PLANER CONTROL

place of the belt shifting device required on belt-driven planers. By each manipulation two speeds in either direction are obtained, the one for which the controller is set and a slow speed which is useful in setting work or in slowing down when cutting hard spots.

The uprights of this planer have wide bearings on the bed and are tied together at the top by a heavy arch which forms a support for the gearing and motor for elevating the cross-rail. The cross-rail is raised and lowered by two screws, one on each upright, adjustment being provided for levelling the rail to take up wear in the threads. Square gibs are provided with facilities for clamping the rail to the uprights. The feed box is so designed that the feeds are positive, the friction being employed only for engaging and disengaging the feed ratchets. Driving gears are enclosed in the bed and are protected from chips and dirt by covers. All gearing is of the spur type, the table being driven by a bull wheel and spur rack. The table is wide, of heavy section and is provided with numerous T-slots and holes for clamping the work. A trough is cast at each end to catch chips.

The board of directors of the American Ship Building Co., at a meeting July 26, passed the regular common stock dividend. The action was not unexpected. The regular quarterly dividend of 1¾ per cent on preferred stock was declared, however, payable Oct. 15.

A New Beam Punch

The Whitney Metal Tool Co., Rockford, Ill., has recently perfected a new ball bearing I-beam punch, which is illustrated herewith. This tool is provided with a ball bearing head by means of which the rotary motion from the source of power is changed to a reciprocating motion at the dies, with very little friction loss. The working parts of the punch operate within a punch stock having an interior thread communicating with the exterior thread of a sleeve or bushing. The sleeve or bushing is securely fastened to the frame by a key. The bushing is in the form of a cylinder provided with a spiral groove on the inside, corresponding to a similar groove cut in the spindle, which slides and rotates in the bushing. Interposed between the bushing and the spindle is a cylindrical ball spacer, having openings arranged in a series so as to properly separate the balls which lie within the grooves. The spacer rotates and moves longitudinally and serves to hold the balls together so that the series reciprocates and rotates bodily as a unit. The balls lying within the grooves constitute a screw thread on the bushing, engaging the corresponding thread on the spindle.

The lower end of the spindle is fitted with a punch and in order that it shall not rotate with the spindle, the latter is provided with a central opening, through which a stem carrying the punch projects loosely. A shoulder is turned on the stem, forming a ball cup corresponding to a similar cup formed on the lower end of the spindle and the pressure of the spindle is transmitted to the punch through balls lying between the two cups. A nut on the upper end of the stem, overlying the upper end of the spindle, as shown in the illustrations, holds the stem against any longitudinal movement with reference to the spindle. On account of its ball bearing construction this punch can be worked on heavy beams and channels with a minimum expenditure of power.

As shown in the illustrations, the frame of the punch is hinged so that the tool may be opened, fitted over a beam which is already in place and quickly clamped, ready for work. The punch is readily portable and is particularly useful for work in the field. The spindle is rotated by short bars placed in cast steel sockets which are rigidly connected to the spindle head.

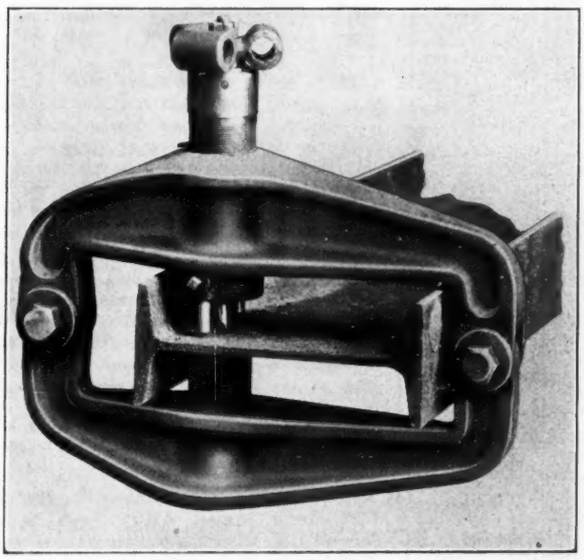


FIG. 1—I-BEAM PUNCH IN OPERATING POSITION

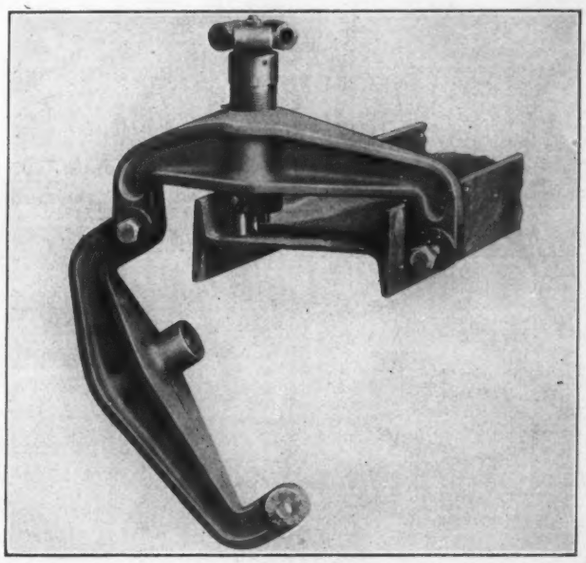


FIG. 2—I-BEAM PUNCH BEFORE CLAMPING

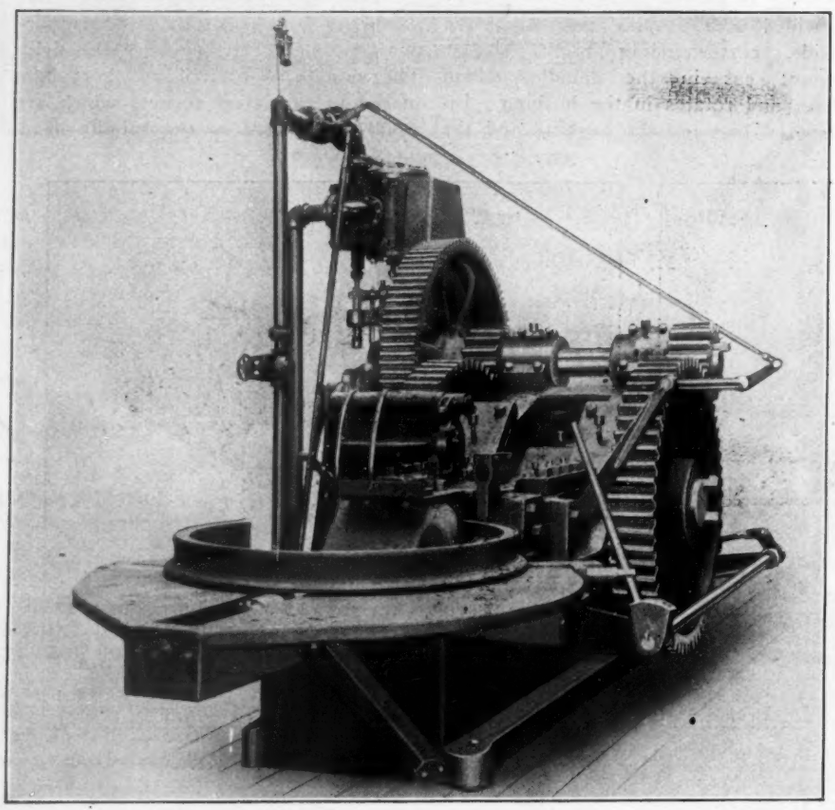
Westinghouse Shipment of Water Wheel Generators

The Westinghouse Electric & Mfg. Co. recently made a shipment of water wheel generators and apparatus from its East Pittsburg, Pa., works, for export to South America. The equipment required eight cars, the generator being of such size that each bed plate covered three-quarters of a flat car. The rotors and frames were boxed and it was found necessary to remove the coils, which were shipped in the box cars with other smaller apparatus, in order to permit the stowing of the machines in the ship's hold. The approximate weight of this shipment was 150 tons.

Horizontal Shearing Machine

A horizontal shearing machine, built by the E. W. Bliss Co., Brooklyn, N. Y., is shown in the accompanying illustration. The motive power is furnished by an independent steam engine equipped with an automatic speed controlling device and the machine is designed for cutting steel scrap and bar stock of round, flat or irregular shapes. The machine has a cutting capacity in soft steel of 12 x 2 inches and can safely exert a pressure of 500 tons. The slide carrying the cutting knife is of sufficient length to provide the proper guidance. The socket and pin for the pitmen end are near the middle of the slide and in this way the downward pressure of the pitman is utilized to minimize any lifting tendency due to the shear of the knives. The slide is held in position and guided by beveled gibs, bolted both horizontally and vertically. The stroke of the slide is 4½ inches, which allows the moving knife to safely clear the bar or a piece of scrap when it is fed in to be cut. The pitman is of cast iron construction and the frame, slide and gears are steel castings. The crank shaft is 10 inches in diameter and the eccenric part which serves as a crank is 14½ inches in diameter. The shaft is driven from both ends, a main driving gear being provided on either side of the press. This arrangement reduces stresses and makes possible a more rigid and compact machine.

The machine is provided with a combined friction clutch and brake operated by a single hand lever. When the hand lever is pulled, the brake is released, the friction thrown in and the machine is started. Throwing back the hand lever stops the machine. The automatic device for controlling the speed of the steam engine is attached to the frame and slide of the machine and actuates a butterfly valve on the engine through rods and levers, so that at the beginning of the working portion of the stroke, the valve opens wider than previously and sufficient steam is admitted to the engine cylinder to maintain the desired speed. When the working portion of the stroke has been passed, the valve partly closes, thereby reducing the amount of steam admitted to the engine and preventing excessive speed. This device takes the place of the usual engine governor. The cylinder of the engine is 12 inches in diameter, stroke 14 inches and the speed from 200 to 250 revolutions per minute. The shearing machine is operated at a speed of from 12 to 15 strokes per minute. At a steam pressure of 80 pounds, the engine will deliver from 70 to 90 horsepower. Including the engine, the total weight of the machine is approximately 65,000 pounds.



BLISS HORIZONTAL SHEARING MACHINE

New Catalogs

METAL CEILINGS.—The Empire Iron & Steel Co., Niles, O., is sending a folder to the trade containing views of a number of handsome metal ceiling installations, together with testimonial letters expressing satisfaction with the type of ceiling furnished.

MOTOR TRUCKS.—An attractive folder has recently been issued by the Kelly Motor Truck Co., Springfield, O. It is devoted to that company's line of motor trucks and some interesting statements are included which bear on the efficiency of this line of motor vehicles.

TURNBUCKLES AND CLEVIS NUTS.—The Michigan Bolt & Nut Works, Detroit, has issued a folder describing and illustrating its line of drop-forged turnbuckles and clevis nuts. The turnbuckles are furnished with round or hexagon heads. They are provided with drop-forged eyes or welded loop-eyes and forged hooks with threaded or swivel ends.

FUEL OIL BURNERS.—In an eight-page pamphlet, issued by the Hauck Mfg. Co., 140 Cedar street, New York City, fuel oil burners for skin drying and baking molds and cores, and for general heating operations, are illustrated and described. Another pamphlet issued by this concern is devoted to portable crucible forges recently described in THE IRON TRADE REVIEW.

FORGING PRESS.—"The Story of the Forging Press" is the title of a 32-page booklet, issued by the United Engineering & Foundry Co., Pittsburg, and contains a reprint of the paper recently read before the Engineers' Society of Western Pennsylvania by Frank I. Ellis of the United Engineering & Foundry Co. The paper traces the development of the hydraulic press and also contains much valuable information on the subject of forging presses.

GENERATING OXYGEN AND HYDROGEN.—In a 16-page booklet, issued by the International Oxygen Co., 68 Nassau street, New York City, its system of generating oxygen and hydrogen for cutting, welding and other purposes, is described in detail. A view of the company's plant at Waverly Park, N. J. is given, as well as interior views of the works, showing installations of these generators. This equipment enables the manufacturer to produce pure oxygen and hydrogen on his own premises and the generators can be installed in small or large units to meet any requirements.

"VISMEKA" SHEETS.—In an eight-page booklet, issued by the Inland Steel Co., Chicago, steel sheets made of anti-corrosion material are described. These are intended for use in the construction of culverts, for roofing and in the manufacture of other articles where a rust-resisting metal is required. These sheets can be furnished as follows: Blue annealed, 3/8 inch to No. 16 gage, in widths up to 48 inches and lengths up to 180 inches; box annealed, No. 18 to No. 26 gage, widths up to 48 inches and lengths up to 144 inches; galvanized, No. 20 to 28 gage, widths up to 36 inches and lengths up to 144 inches. Corrugated sheets for culverts and flumes and other forms of roofing and siding for elevators, rolling mills, etc., are also manufactured.

Trading on the New York stock exchange last week was attended by a series of downward price movements but losses were not large. The rate ruling against the railroads and developments in the Moroccan situation were the weakening factors. The passing of the reciprocity bill had little effect on the market.

On Monday, stocks opened lower on foreign selling, rallied slightly, but again turned weak and closed lower; corn and cotton markets were weak and lower; foreign markets ruled weak. On Tuesday, foreigners continued extensive sellers and market was active but weak. Wednesday, stocks opened weak and lower but partly recovered; foreign markets continued depressed; English consols broke to 77¼, the lowest price ever quoted on the present interest basis. Thursday, the market declined sharply, Canadian Pacific showing large loss. Friday, dealings on the exchange fell off one-half but prices closed slightly higher; foreign selling ceased in New York; cotton closed at the lowest price on the movement but wheat closed higher. Saturday, prices were steady to firm but trading was dull; cotton closed lower.

Money on call ranged from 2½ to 2 per cent. Time money was not particularly active and rates were unchanged. The statement of the actual condition of clearing house institutions showed loans increased $4,668,000; net deposits decreased $2,510,000; total reserve $439,638,000; excess of reserve $17,745,450, a decrease of $1,765,300; and the percentage of reserve was 26.2, compared with 26.0 the previous week. Non-member banks and trust companies showed loans decreased $3,067,000; net deposits decreased $4,899,700, reserve on deposits decreased $534,100, and the percentage of reserve 19.3 against 19.1 the week previous. Commercial failures for the week were 241, against 239 the previous week and 200 the corresponding week last year. Bank clearings for the week were about 4.4 per cent below last week and 3.4 per cent below last year. The fortnightly railroad statistics showed a decrease in the number of idle cars of 14,549, compared with an increase of 451 the preceding fortnight. Shares were sold to the number of 1,714,500, compared with 1,525,643 the preceding week and 4.834,600 the corresponding week a year ago. Bonds, exclusive of government bonds, were sold to the amount of $12,718,000, compared with $19,308,000 the preceding week and $12,673,000 the corresponding week last year.

	Closing Quo. July 29	Changes in week	Annual Meeting date 1911	Stock Outstanding	Basis	Dividend Last	Dividend Pay Date	Dividend Pay Last
Allis-Chalmers	8½	.....		$19,820,000		.....	.....	
Allis-Chalmers, pr	28	— ½	Nov. 2	16,150,000	7 cum.	1¾ Q.	Feb.,	1904
American Can	11⅛	— ⅛	Feb. 1	41,233,300		1¾ Q.	.....	
American Can, pr	87¼	+ ¼		41,233,300	7 cum.	1¾ Q.	July,	1911
Am. Car & Fdy	56⅜	—1⅜	June 29	30,000,000		½ Q.	July,	1911
Am. Car & Fdy., pr	118⅛	— ⅛		30,000,000	n. c.	1¾ Q.	July,	1911
American Loc	37¾	—1¾	Oct. 17	25,000,000	5	1¾ Q.	Aug.,	1908
American Loc., pr	105	—3		25,000,000	7 cum.	1¾ Q.	July,	1911
American Ship	64	— ¾	Oct. 11	7,600,000	4	2 Q.**	June,	1911
American Ship, pr	111	.....		7,900,000	7 cum.	1¾ Q.	Oct.,	1911
Am. Steel Foundries	39	— ⅞	Des. 7	17,184,000		1 Q.	May,	1911
Barney & Smith	20	.....	June 6	2,000,000	4	1 Q.	Dec.,	1907
Barney & Smith, pr	87	.....		2,500,000	8 cum.	2 Q.	June,	1911
Bethlehem Steel	36	+3½	April 4	14,862,000		.....	.....	
Bethlehem Steel, pr	64⅜	+1¾		14,908,000	7 n. c.	¾ Q.	Feb.,	1907
Cambria Steel	47	+ ½	Mar. 21	45,000,000	5	1¼ Q.	Aug.,	1911
Cambria Iron	44	.....		8,468,000*	4	2 S. A.	Apr.,	1911
Chicago Pneumatic Tool	41¾	.....	Feb. 20	6,485,800	4	1 Q.	July,	1911
Colorado Fuel	33½	—2	Oct. 16	34,235,500		1¾ Q.	Apr.,	1902
Crucible Steel	13	.....	Oct. 18	24,578,400		3½	.....	
Crucible Steel, pr	82½	— ½		24,463,500	7 cum.	1¾ Q.	June,	1911
Empire Steel	5	.....	Feb. 23	1,254,770		.....	.....	
Empire Steel, pr	50	.....		2,500,000	6 cum.	1 S. A.	July,	1911
Fay & Egan	70	.....	Feb. 21	1,000,000	6 cum.	3 S. A.	Feb.,	1911
Fay & Egan, pr	110	.....		1,000,000	7 cum.	1¾ Q.	May,	1911
General Electric	162¼	—1	May 9	65,179,600	8	2 Q.	July,	1911
Harbison-Walker	54½	+9½	Jan. 16	18,000,000		½ Q.	June,	1911
Harbison-Walker, pr	98	.....		9,600,000	6 cum.	1½ Q.	July,	1911
International Pump	40¾	—1¾	Dec. 12	17,762,500		1 Q.	Nov.,	1910
International Pump, pr	88¾	.....		11,350,000	6 cum.	1½ Q.	Aug.,	1911
Lackawanna Steel	37½	—4½	Mar. 8	34,978,000		.....	.....	
Lake Sup. Corp	27	.....	Oct. 4	40,000,000		.....	.....	
New York Air Brake	75	.....	Mar. 8	10,000,000	6	1½ Q.	July,	1911
Niles-Bement-Pond	94	.....	Feb. 8	8,500,000	6	1½ Q.	June,	1911
Niles-Bement-Pond, pr	104	.....		2,000,000	6 cum	1½ Q.	May	1911
Otis Elevator Co	71	.....	Mar. 20	6,375,000	1	1 Q.	July,	1911
Otis Elevator Co., pr	100	.....		6,310,000	6 n. c.	1½ Q.	July,	1911
Pa. Steel	60	.....	May 8	10,750,000		.....	.....	
Pa. Steel, pr	106	— ½		16,500,000	7 n. c.	3½ S. A.	May,	1911
Pittsburg Coal Co	21⅜	+1	Feb. 10	28,104,600		.....	.....	
Pittsburg Coal Co., pr	90⅛	+3¼		27,071,800	7 cum.	1¾ Q.	July,	1911
Pressed Steel Car	36⅞	— ⅝	Feb. 15	12,500,000		1 Q.	Aug.,	1904
Pressed Steel Car, pr	102½	.....		12,500,000	7 n. c.	1¾ Q.	Aug.,	1911
Pullman	162	.....	Nov. 8	120,000,000	8	2 Q.	Aug.,	1911
Railway Stl. Spring	36¾	— ¾	Mar. 2	13,500,000	2	1 S. A.	Oct.,	1908
Railway Stl. Spring, pr	101¼	.....		13,500,000	7 cum	1¾ Q.	June,	1911
Rep. Iron & Steel	29⅞	— ⅜	Oct. 18	27,191,000		.....	.....	
Rep. Iron & Steel, pr	94½	.....		25,000,000	7 cum.	1¾ Q.	July,	1911
Sloss-Sheffield	49½	— ½	Mar. 15	10,000,000	5	1¼ Q.	Sept.,	1910
Sloss-Sheffield, pr	112	.....		6,700,000	7 n. c.	1¾ Q.	July,	1911
U. S. Pipe & Fdy. Co	16	.....	June 28	12,106,300		1 Q.	Dec.,	1910
U. S. Pipe & Fdy Co., pr	52⅛	—1⅜		12,106,300	2	1¼ Q.	June,	1911
U. S. Steel	79⅜	— ⅜	April 17	508,302,500	5	1¼ Q.	Sept.,	1911
U. S. Steel, pr	120	+1⅛		360,281,100	7 cum.	1¾ Q.	Aug.,	1911
U. S. Steel 5s	105⅜	— ⅝		463,798,000	5	.....	.....	
Va. Iron, Coal & Coke	88¾	—1¼	Sept. 19	9,073,680		5. †	Oct.,	1907
Westinghouse Electric	73⅜	—1⅞	July 26	3,998,700*		1¾ Q.	July,	1911
Westinghouse Air Brake	152½	+1½	Oct. 3	13,750,000*		5 Q. ‡	July,	1911

Par value of shares, $100, except those starred (*), $50.
**Includes last 1 per cent payment of 4 per cent extra.
†Stock.
‡Includes 2½ regular, 1½ extra and 1 special

Copper Stocks.

New York.—Amalgamated Copper closed 67, a net loss of 2⅜.

Boston. — Butte Coalition closed 18⅛, a net loss of ⅛; Calumet & Arizona closed 57, a net loss of 1; Calumet & Hecla closed 448, a net loss of 7; North Butte Mining closed 32, a net loss of 1¼; Quincy Mining closed 73, a net loss of ½.

Financial Notes.

The Standard Sanitary Mfg. Co., Pittsburg, has declared the regular quarterly dividends of 1 per cent on common stock and 1¾ per cent on preferred, also an extra dividend of 1 per cent on the common.

THE IRON TRADE REVIEW

Devoted to Iron and Steel Manufacture and to the Machinery, Metal-Working and Foundry Trades.

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THE AVERAGE PAID CIRCULATION OF THE IRON TRADE REVIEW FOR THE ISSUES OF THE FOLLOWING MONTHS WAS:

May, 1910	5,827
June	5,842
July	5,864
August	5,875
September	5,895
October	5,955
November	5,993
December	6,026
January, 1911	6,058
February	6,072
March	6,091
April	6,108
May	6,112
June	6,124

August 3, 1911

Coking Pittsburg Coal Seam in By-Product Ovens

Testimony given last week before the congressional Steel Corporation investigating committee by John W. Boileau, of Pittsburg, directs attention afresh to two facts that have been gradually coming to be recognized in the past few years, viz; that the major part of the Pittsburg coal seam can be coked, and that the so-called "Connellsville region" has no strict natural boundary. What is familiarly known as the "old basin" contained the best coking coal in the whole region, but when operations began to be extended to the south a little over a decade ago, it was found that the new district, variously known as the "Klondike," "Masontown" or "lower Connellsville," was capable of producing substantially as good coke as the general run of the coal in the old basin. Of course there are variations in analysis and structure in any given district, and experience has shown how to distinguish, so that nowadays as much attention is paid to the particular description of coal which has been obtained from a given working, and to the methods employed by the producer in making coke from it, as is given to the general point of what district claims the operation.

The extension of the recognized coking district from the old basin to the lower Connellsville a decade or so ago constituted quite a departure, but in recent years it has come to be recognized that there is no stopping, and the Pittsburg seam in Washington and Greene counties is regarded as a coking coal, to be worked in nearly all parts, but of course with careful selection of the portion of the thickness of seam to be coked, and in many cases with washing.

Whereas the original Connellsville and lower Connellsville districts did not contain over 100,000 acres, of which much has since been exhausted, the new portions of the Pittsburg seam which have been admitted to be of coking quality run to the hundreds of thousands of acres. To furnish a general conception of what this means, it may be remarked that in the early years the United States made pig iron only with charcoal, and later made a large percentage with anthracite, while even in recent years only about half the pig iron, roughly speaking, has been made with Connellsville coke. The total production of pig iron in the United States from the very beginning to date has been about 400,000,000 tons, and to make this entire tonnage with coke from this seam, using the common measure of 7,000 tons of coke per acre, would require only 50,000 to 60,000 acres of coal, so that when there remain hundreds of thousands of acres of the seam in southwestern Pennsylvania the importance of these deposits for the future can readily be appreciated. With the present rate of pig iron production from all western Pennsylvania coals, exhaustion is proceeding at the rate of only 2,000 to 2,500 acres a year.

The great bulk of the coal thus recently added to the visible supply will undoubtedly be coked by one or the other of the general by-product systems. No important extension of the beehive system is at all probable. Whatever the theoretical arguments urged on either side, common thought in the iron industry has crystallized very clearly on the principle that the beehive oven had better continue to be used at the workings where it is installed while the by-product oven is clearly the one to be selected for practically all of the newer districts.

The measure of the rapidity with which the by-product system will be adopted is usually taken as being the availability of capital. A by-product plant costs a great deal more than a beehive plant, and however it may be in other industries, the iron industry's uniform experience has been that improvements, however economical they may be shown to be upon paper, must generally wait for a time until capital becomes available. Despite the enormous investments which have been made, the iron industry has always been waiting on capital, being ever able to figure out clear economies of one sort or another, as soon as the capital can be found. Thus it is that the opinion is frequently held that the development of by-product coking is much slower than it would be were it not that such large capital expenditures are required. Such an opinion is not strictly correct. There is another factor of commanding importance which is frequently lost sight of, though fully recognized by coke producers and consumers who are looking forward to the more general adoption of by-product coking, and that is that on account of the difference in the coal which can be used in by-product and beehive coking, the

capital expenditure for the coal is much less with by-product than with beehive ovens, whereby the total capitalizations against the one operation or the other are not nearly as dissimilar as are the capitalizations standing against the respective ovens alone.

The common method of thought in the Connellsville region is to assume a life of 20 years to an operation, hence to take a given number of acres of coal per oven installed usually two acres. Of course this is not a rule, there being many operations based on higher and lower proportions, but the proportion of two acres per oven is perhaps nearer the average than any other. In the case of a merchant coking operation this is well, but in the case of a large steel interest the case is quite different. Such steel operations are usually ambitious, and look to provision for more than 20 years in the future. They prefer to provide themselves, if possible, for 30 or 40 years, and to allow for expansion in production. A steel operation can readily build more blast furnaces and increase its steel making operations, but once based on a given coal deposit it cannot as readily go out and buy more acres of the coal. Hence a steel works is likely to wish to have several times as great a proportion. One prominent independent steel interest is credited with holding coal acreage which, if all coked, would last two centuries at its present rate of blast furnace operations, or say ten times the proportion which we have cited as common with the merchant coking operations of the Connellsville region.

In such cases the difference in value of coal acreage makes an enormous difference in the capitalization required. It is utterly out of the question to buy coal at $2,000,000 an acre, or even $1,000 an acre, against an operation lasting several decades. Avoiding any extreme case one may take an operation based on 50 years, and a saving of $500 per acre through using a by-product rather than a beehive coal, if such a loose method of distinction may be permitted for the sake of the present argument. Such an operation would involve about five acres per beehive oven, and the saving in capital investment would be $2,500 against the output of one beehive oven. This obviously would more than cover the extra cost of by-product installation.

Of course, at best the by-product operation is expensive to install, but it is clear that if a steel works contemplates providing itself with coke for half a century it will require less capital to accomplish its end by selecting a by-product arrangement than a beehive arrangement. For the development of a small tract in the Connellsville region for merchant purposes there may possibly remain an argument in favor of beehive, and for the continuance of present beehive operations there may be a somewhat stronger argument, but these are entirely beside the question of a large consuming interest looking to its future.

Expo. at Knoxville.—Plans are being rapidly made for the Appalachian Exposition, an annual institution, which will be held in Knoxville, Tenn., from Sept. 12 to Oct. 1. It is participated in by the iron and steel interests of that section, and this fall's display will be no exception. Unusually interesting will be the displays which have been arranged for of iron and copper ores which are found in the Appalachian region. Specimens of the different forms in which the metals are found will be exhibited in number.

The Paulista railway of Brazil, has placed two 10-wheel locomotives with the American Locomotive Co., and the San Rafael & Atlixco Railway one 10-wheel passenger locomotive with the same builder.

Copper exports for the week ending July 27 were 10,172 tons, an increase of 4,620 tons; the month to date, 32,135 tons, an increase of 11,122 tons; from Jan. 1 to date, 187,979 tons, an increase of 37,748 tons.

The Pressed Steel Car Co. has declared the regular quarterly dividend of 1¾ per cent on preferred stock, payable Aug. 23.

Butte Coalition Co. has declared the regular quarterly dividend of 25 cents a share, payable Sept. 1.

Fines Follow Additional Pleas of Manufacturers

Additional wire and horseshoe manufacturers who were recently indicted by the government as being parties to the price pools and associations in contravention of the Sherman anti-trust act, are appearing before the United States district court at New York, pleading *nolle contendere*, and are having fines assessed against them. These fines, as in the case of the first defendants to plead no defense, are $1,000 for the first count, and $100 for each additional alleged infraction of the law. Philip S. Dyer, secretary and treasurer of the American Horse Shoe Co., Richard W. Comstock, vice president of the Rhode Island-Perkins Horse Shoe Co., Henry A. and Henry D. Reed, of the Bishop Gutta Percha Co., Dana R. Bullen, of the General Electric Co., and Wallace S. Clarke, of the Rubber-Covered Wire Association, were each fined $1,000 by Judge Archbald, when they pleaded July 27. Messrs Bullen and Clarke had originally pleaded not guilty, but changed their pleas to *nolle contendere*.

Eleven other defendants on July 31 filed pleas of *nolle contendere*, including Francis W. Carpenter, who is seriously ill. Fines of $1,600 each were entered against W. P. Palmer, president of the American Steel & Wire Co., Frank Baackes and Herbert O. Phillips; of $1,500 against George A. Cragin and Charles W. Bassett; of $1,300 against D. A. Merriam; of $1,100 against Edwin Bartram and George F. Rummel; of $1,000 against Francis W. Carpenter, LeBaron C. Colt and Frederick L. Dunbar.

Car Works Building.—The Nova Scotia Car Works, Halifax, N. S., is completing a number of improvements to its plant. The forge shop is now equipped with 17 crude oil furnaces and the new gray iron foundry has been put in operation. A new building has been completed, which almost doubles the wheel capacity and the work of installing the new machinery in the steel car plant is well under way. The steel erecting shop will be of steel, 100 x 300 feet, and will be equipped with electric overhead traveling cranes and electrically driven tools and air tools. The company will begin to manufacture steel cars on Oct. 1 and will have a capacity of 10 steel cars a day. The capacity for wooden cars has been increased from six to twelve daily.

Denounced as a Cruel and False Accusation

Is Charge that Steel Corporation Forced Throwing Out of Tennessee Stocks—Testimony of Messrs. Ledgard, Hanna, Oglebay, and others.

How, at the suggestion of his client, Col. Oliver H. Payne, he had first brought to the attention of J. Pierpont Morgan the purchase of the Tennessee Coal, Iron & Railroad Co. stock as a means of saving the hard-pressed house of Moore & Schley in the panic days of 1907, and thereby of averting the disastrous effects that might follow the suspension of this firm, was told to the Stanley investigating committee at New York, Saturday, July 29, by Attorney Lewis Cass Ledyard, of New York, who, as counsel for interested parties, acted as a direct factor in the transfer. So thoroughly permeated with the intimate details and circumstances of the transaction was Attorney Ledyard's recital that it proved the most interesting evidence surrounding the actual consummation of the sale that has yet been adduced before the committee.

Striking the witness table with dramatic fervor at one stage of the examination, Attorney Ledyard declared that there never was a more cruel, more unfounded or more outrageous implication than the suggestion that the United States Steel Corporation through its alliance with Mr. Morgan and his banking connection deliberately forced the throwing out by the banks of Tennessee stock put up as collateral and thereby permitted it to buy in the property. He declared that to his knowledge none of the so-called Morgan banks, which were holding large blocks of Tennessee stock, had called these loans. Mr. Morgan himself had a large loan out to Moore & Schley, but never called it, and the First National Bank of New York, known as a Morgan bank, not only did not call a large loan to Moore & Schley, which it had, but it contributed to the support of the wavering institution, Mr. Ledyard asserted. During the negotiations, the witness said, Mr. Morgan had told him that he did not intend to urge the Steel Corporation to purchase the Tennessee stocks as a means of alleviating the situation. "I have merely put it up to them for their final decision," Mr. Ledyard testified was Mr. Morgan's statement to him.

"During the last week in October, 1907," said the witness, "Col. Payne told me the firm of Moore & Schley were much indebted to him for stocks having been loaned to them and he was much concerned over their condition. He said the firm had a large amount of Tennessee Coal, Iron & Railroad stock up on loans and that some banks were asking substitution of it by more active collateral. He said he did not see any other way how Moore & Schley could be saved than by the purchase of the Tennessee stock by the Steel Corporation. He didn't see any market for it anywhere else. The best way to bring this to the attention of the Steel Corporation, he said, was through Mr. Morgan, and he proposed to suggest this cause to Mr. Schley. Later Mr. Schley telephoned me to come to his office and said that he was going to avail himself of Col. Payne's suggestion. I spent several hours with him, going over his condition. He told me he had loans outstanding on collateral aggregating $33,000,000 to $35,000,000, and I knew of additional obligations, as Col. Payne had loaned the firm securities which could be readily realized upon and had taken in return inactive stock including 15,000 shares of Tennessee stock.

"I asked Mr. Schley what would pull him out and he said nothing less than par on Tennessee stock.

Morgan Calls in Gary.

"The next day, Saturday morning, I saw Mr. Morgan at his library. When I told him of Moore & Schley's condition, he expressed the greatest concern and said that this was the most serious thing in connection with the panic that had yet been brought to his attention, as this house had heavy loans not only in Wall street, but in Chicago, Boston, Philadelphia and elsewhere, and that a number of other Wall street houses might be on the very brink of disaster because of its condition. The trouble with Moore & Schley was that they had in their possession a large amount of securities which were inactive and could not be realized upon in those times of stress. The most aggravated case was the Tennessee stock. 'This is very serious,' said Mr. Morgan, 'for if Moore & Schley go, there is no telling what the effect will be on other Wall street houses and banks.'

"To my suggestion that the Steel Corporation take over the Tennessee stock, Mr. Morgan said he would see what could be done and said he would call in Judge Gary and Mr. Frick. He did so and Judge Gary expressed reluctance to buy the stock. He didn't think it was worth what I thought would be necessary to accomplish the purpose of saving Moore & Schley and helping the situation. Judge Gary said the stock was not worth over 60 to 65, but I told him that if he would wait long enough, he could get it at 25, if by that time the Steel Corporation was in a condition to buy anything, which I didn't believe it would be.

"There were many conferences going on in Mr. Morgan's library at that time, as the condition of two trust companies was critical. There was help to be given here and extension there. The whole situation was very tense. Mr. Morgan and Judge Gary wanted an examination of the condition of Moore & Schley so that all the statements of their embarrassment would be verified. This was done after two days' and nights' work and when I saw Mr. Joyce, of J. P. Morgan & Co., one of those making the examination, he confirmed my view that if Moore & Schley could get Steel Corporation bonds and realize about par on their Tennessee stock, they would be in good shape. Judge Gary had suggested loaning Moore & Schley $5,000,000, but Mr. Schley said this sum would be practically useless. When the deal was finally made, the Corporation wouldn't give cash, but offered bonds. There was some disagreement as to the price. Judge Gary wanted to put in the bonds at what he thought was their real value, but I said we didn't want to take any chances and had better make it a sure thing by basing them upon the quotation of the last business day, which was 84. Mr. Morgan agreed with me and this was done."

The committee pressed the witness as to what he knew of the trip of Judge Gary and Mr. Frick to Washington to lay before President Roosevelt the plans for this transaction. Mr. Morgan had told him at the time, he said, that Judge Gary and Mr. Frick had gone to Washington to see the president, as they didn't want to make the deal and be assailed by the government later. He said, however, Judge Gary was in error in testifying that the deal had been practically closed with the witness before going to Washington. Attorney Ledyard stated that at this time, nothing definite was decided nor was the price fixed.

Asked whether he did not think the visit to President Roosevelt under the circumstances was a strange proceeding, Mr. Ledyard replied, "I don't consider now nor have I ever considered that there was anything illegal in the pur-

chase of the Tennessee company. If a Corporation is attempting to carry out a praiseworthy motive, I do not see why it cannot go to the government and ascertain if it is likely to be attacked for doing so, because if that latter be the case, it would not be worth the trouble it was taking."

Congressman Littleton, of the committee, made a strong effort to show by the witness that the Tennessee stock of Moore & Schley offered the Steel Corporation was largely free stock outside of that held by the syndicate, which it was privileged to dispose of through the default of customers and that through this the syndicate members were forced to sell their holdings. Attorney Ledyard said he knew of one case at least where the firm had obtained a block of the stock by default and that he presumed that Mr. Schley had a good deal more of the stock which he could re-hypothecate because of default other than the syndicate stock, of which he was a manager. He said, however, he could not speak with authority upon this point.

Hanna Tells of Syndicate.

That there were no deliberate efforts made to depress the stock of the Tennessee Coal, Iron & Railroad Co. immediately prior to its purchase by the United States Steel Corporation, through the banks demanding the substitution by other securities, of large blocks of it put up in New York as collateral, was the opinion given to the committee at its opening session in New York, Friday, July 28, by L. C. Hanna, of Cleveland. Mr. Hanna, with G. B. Schley, was a manager of the syndicate which held and transferred the majority of the Tennessee stock to the Steel Corporation. He said that his syndicate was simply the victim of the business conditions culminating in the panic of 1907, which forced it to dispose of its holdings in the best possible way, in order to avert more widespread and serious consequences to the country at large. Mr. Hanna declared that the steadying effect from this action came by reason of the substitution of United States Steel Corporation second mortgage bonds for which there was a ready market at the time, for the Tennessee stock for which there was no market at practically any price. This conversion of a dead into a liquid asset greatly strengthened the weak banks holding such collateral and did much to restore confidence, the witness said. Mr. Hanna stated that subsequent developments proved that this act marked the turning point in the crisis. "The situation was such that it was thought that if Moore & Schley had gone, a number of other institutions would go, conditions would have become much worse and pass beyond the control of man," said Mr. Hanna, speaking of the acute stage which affairs in New York had reached.

Mr. Hanna gave the committee some additional details as to the operations of the syndicate that controlled the Tennessee properties. He said that he and his colleagues, after deciding upon their plans to acquire a majority holding, in the fall of 1905, had purchased in one day 82,000 shares at 110 and the next day 36,500 shares at a slightly lower price. The total outstanding stock of the company at the time was 223,000 shares. Later in 1906, an additional block of 40,000 shares was acquired, until at the time of the transfer to the Steel Corporation in November, 1907, two-thirds of the company stock was held, or about 200,000 shares.

The syndicate bought the property for the purpose of operating and developing it and the compelling influence in this purchase, he stated, was the mineral holdings of the company, suggesting a great potential value. It was estimated by engineers that the company had deposits of 400,000,000 to 500,000,000 tons of ore, 1,000,000,000 to 2,000,000,000 tons of coal and large quantities of limestone, though Mr. Hanna thought these figures might have been excessive. In all, $7,000,000 was spent for improvements and an additional issue of $3,500,000 had been made to carry on improvements and replacements when the syndicate's stock was sold. When acquired by the Corporation, the company had on its books for 1908 delivery about 350,000 tons of open-hearth rails and was well booked up in other products, the witness said. It had been paying 4 per cent dividend.

Chairman Stanley sought to support by the witness, a public statement he had previously made that by the absorption of the Tennessee property, the Steel Corporation came into possession of a large body of so-called self-fluxing ores, represented to be the most valuable of their kind in the country. Mr. Hanna made it clear that the chairman was misinformed upon this point, as he stated that self-fluxing ores are not to be found in any quantity in this country and that so far as their lime and magnesia contents, the self-fluxing properties, there is no appreciable difference between the so-called self-fluxing ores of the south and the ores of the Lake Superior region.

In an effort to arrive at an estimate of the real value of ore in the ground for comparison with the Steel Corporation's estimate and as affecting the question of its capitalization, Congressman Gardner endeavored to obtain an expert opinion from Mr. Hanna upon this point, but gained little for his pains. The witness did say, however, that he considered the valuation of $1.00 a ton put by the Steel Corporation ten years ago on ore in the ground as "full high". During his examination, Mr. Hanna furnished the committee with copies of the original and supplemental syndicate agreements which had been in his possession.

E. W. Oglebay, of Oglebay, Norton & Co., Cleveland, who was also a member of the syndicate, covered practically the same grounds as Mr. Hanna's testimony when he appeared before the committee, Saturday morning. He said he acquired his interest as a permanent investment because he thought it a good property and still thought so. Asked if he had ever heard the implication that the Steel Corporation by conspiracy had deliberately forced the sale, Mr. Oglebay said that all that ever came to his ears was the general gossip.

PORT ARTHUR DOCK

Proposed by Canadian Pacific—Algoma Railroad Contract.

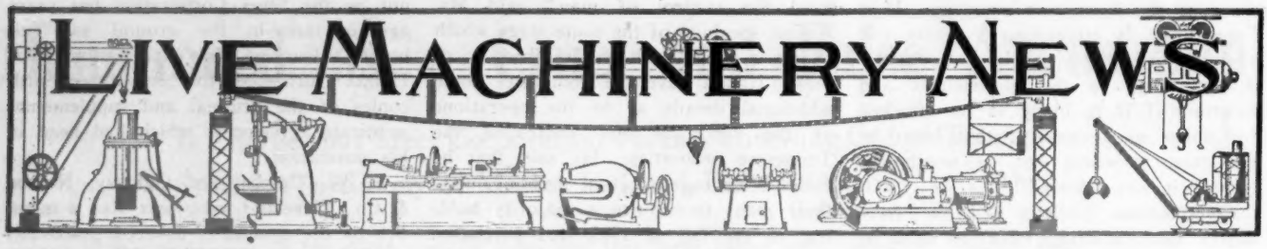
Toronto, Can., July 29.

An agreement has been signed between the city of Port Arthur and the Canadian Pacific railway, under which the Canadian Pacific agrees to erect a large passenger dock and freight sheds at a cost of $260,000 and to give running rights over its line from West Fort for the Grand Trunk Pacific, thus securing the entry of that road. The preliminary plans for the dock show double sheds with six tracks running between them. This will make Port Arthur the upper lake headquarters for the passenger traffic of the three trans-continental railways.

The contract for the grading of the 107 miles of the Algoma Central railway which remains to be constructed, has been given to J. D. McArthur of Winnipeg. This stretch will connect the line with the Grand Trunk Pacific, bringing it to within 100 miles of Hudson bay and opening up a country rich in pulp wood and well adapted for farming. The contract represents an outlay of about $3,000,000, and the work must be begun immediately and completed within two years

The Cockshutt Plow Co. of Brantford, and the Frost & Wood Co. of Smith's Falls, agricultural implement manufacturers, have united their sales departments. The Cockshutt company takes over all the territory west of Peterborough, and the Frost & Wood Co. the territory east of that point, each acting in its own division as sole agent for the other.

LIVE MACHINERY NEWS



The machinery market in New York continues spotty, but some improvement is reported, especially in the demand from automobile manufacturers. There is, as yet, no sign of railroad buying. In Pittsburg, it is announced that the Apollo Sheet & Tin Plate Mfg. Co. will build an open-hearth plant, blooming mill and eight sheet and tin-plate mills at Apollo, Pa. It is also expected, from the action of the stockholders of the Youngstown Sheet & Tube Co. that that concern will soon take bids for its proposed new open-hearth plant. In Cleveland, no new business of importance has made its appearance, the only large list out at present being that for the proposed technical high school. In Chicago, some desirable lots of machinery have been placed recently, chief among these being equipment for the new Tractor works of the International Harvester Co. Electrical equipment continues to be the leading issue in the machinery markets of the Pacific coast.

Iron and Steel Works

The American Works of the American Bridge Co. at Chicago is to be rehabilatated and improved for the better handling of various present-day forms of fabricated tonnage.

The Apollo Sheet & Tin Plate Mfg. Co., Apollo, Pa., will build an open-hearth steel plant, blooming mill and eight sheet and tin mills at that place. C. H. Burgham, Canton, O., will be general manager.

The Crucible Steel Co. of America is planning the erection of two additional buildings at Harrison, N. J. One of these will be 61 x 160 feet and the other 54 x 240 feet. The former will be used for the press department and the other for the treatment department.

Water Works

The city of Windsor has adopted a bylaw for raising $50,000 for extensions to the water system.

The citizens of Cornwall, Ont., have approved a bylaw to raise $30,000 for a new water system.

James P. Goodrich, Winchester, Ind., will build a water system at Mitchell, Ind., under the terms of his contract with the municipality whereby he took over the electric light plant. The latter may be enlarged somewhat.

The finance committee of the borough of Tarentum, Pa., is advertising for bids for the sale of bonds aggregating $100,000. The proceeds will be used for proposed new water works for which a site has already been selected.

Proposals for installing a new pump in the pumping plant at the Madison Barracks, New York, will be received at the office of the quartermaster until Aug. 16. Plans and specifications may be had on application at the quartermaster's office.

Foundries

Ground has been broken by the Youngstown Sashweight Co., Youngstown, O., for a new plant to be built in Girard, O.

The R. M. Eddy Foundry Co., Chicago, has taken out a permit to build a two-story brick foundry addition to its plant, to cost in the neighborhood of $4,000.

The contract for the proposed new plant to be erected at Emporium, Pa., by the Independent Iron & Foundry Co. has been awarded to the American Bridge Co.

The new brass foundry that is being erected at West Lynn, Mass., by the General Electric Co., Schenectady, N. Y., is under roof and will be ready for occupancy within two months.

The Standard Steel Car Co. is making improvements at its Verona, Pa., plant, which was acquired about one year ago. The improvements include the installation of a number of molding machines, etc.

The Salem Brass Foundry Co., Salem, Mass., Geo. Godsland, proprietor, will erect a new foundry on the outskirts of Salem in the immediate future, having recently purchased ground for this purpose. The present plant will be torn down to make room for trackage of the B. & M. railroad.

The business of the Central Iron Foundry, Salem, Mass., formerly conducted by C. H. Learock, has been sold to Jas. A. Leonard, formerly assistant foundry foreman with the Turner Tanning Machinery Co., Peabody, Mass. Mr. Leonard contemplates building an addition to his foundry in the near future to accommodate 20 additional molders.

New Works

The Noiseless Wheel & Truck Co. is building a plant at Cedartown, Ga. The company has $100,000 capital. C. P. Morris is general manager.

Architect U. J. L. Peoples, Pittsburg, is preparing plans for a new factory to be erected for the Eureka Chemical Mfg. & Roofing Co., on Brushton avenue, Pittsburg.

The Cartercar Co., Pontiac, Mich., is erecting a large brick and steel addition which will be occupied by the machine department. The building will contain 10,000 square feet of floor space.

A building permit has been issued at Pittsburg, Pa., to the American Bridge Co. for a three-story addition to its shops at Forty-second street and the Allegheny Valley railroad to cost $17,000.

The Art Brass & Plating Works, Louisville, which recently took over the plant of the Apex Mfg. Co., plans the manufacture of plumbers' supplies, and will require some equipment later on. For the present, however, only one or two items are needed.

William Bal, Inc., 2 Johnson street, Newark, N. J., has awarded the contract for a new factory building which will be erected at Vesey street and New Jersey Railroad avenue, Newark, to the Lewis Packer Building & Construction Co. The estimated cost is $26,000.

The Narragansett Machine Co., Providence, R. I., is building an addition to its plant, 65 x 100 feet, two stories, brick. This addition, together with the one completed several months ago, greatly increases the facilities of the machine work department and provides additional facilities for the manufacture of grinding ma-

chinery. A large number of machine tools have recently been installed.

Carl Hartman has purchased the interests of his partners in the Hartman Nelson-Zaphe Co., machine and boiler Works, Green Bay, Wis., and will eventually consolidate this plant with the new machine shops now under construction for the Hartman & Greiling Machine & Boiler Works on the Fox River near Green Bay.

Prack & Perrin, Berger building, Pittsburg, have awarded a contract for the concrete piling for the proposed new machine shop to be erected at Trafford City, Pa., for the Westinghouse Electric & Mfg. Co. Bids for the complete structure, which will cost about $180,000, have been received, but the contract has not yet been awarded.

The Rockford Milling Machine Co., Rockford, Ill., manufacturer of milling machines, is erecting a new factory, 80 x 100 feet, at Harrison and Eleventh streets. The building will be occupied about Oct. 1. The company advises that it will be in the market for considerable shafting, belting, pulleys and will also need some motors and grinding machines.

Power Plant Equipment

Custer, Okla., is about to commence the construction of an electric lighting plant.

Butler, Okla., has granted a 20-year franchise for an electric lighting plant to W. K. Kise.

The Cleveland, Southwestern & Columbus Railroad Co. is planning to erect a power house at Ashland, O.

Solomon, Kas., will issue $30,000 worth of bonds for the construction of an electric lighting and water plant.

The Anniston Electric & Gas Co., Anniston, Ala., is reported to be in the market for a boiler. Delivery is to be made during September.

W. A. Guenther & Sons, Owensboro, Ky., are in the market for electrical equipment, including a 50-kilofatt 60-cycle alternating current generator.

The Osborn Engineering Co., 20 East Broad street, Columbus, O., will receive bids until Aug. 10 for two 125-horsepower horizontal tubular boilers.

The Auglaize Power Co., J. M. Ashley, president, Defiance, O., is contemplating the construction of a hydro-electric power station to cost $500,000.

Charles W. England, chairman of the sewerage commission, 904 American building, Baltimore, will receive bids until Aug. 9 for the installation of generators in the sewage pumping station.

P. O. Keilholtz, Baltimore, has completed plans for the proposed 25,000-horsepower capacity power plant to be erected by the Western Maryland Power Co.

The Sacramento Valley Power Co., San Francisco, proposes to spend $600,000 for improvements to its plants. New generating plants will be erected later.

H. S. Mitchell, Cadiz, Ky., will be in the market shortly for power equipment for the operation of a steam laundry. Work on the construction of a building is now under way.

The Portland Railway, Light & Power Co., Portland, Ore., Rollin K. Page, manager, will rebuild its plant which was recently badly damaged by fire. Estimated cost is $65,000.

The Lebanon Electric Light Co. and the Lebanon Heating Co., both of Lebanon, Ind., have merged. Both plants will be enlarged and improved and new machinery will be installed.

A hydro-electric plant for the generation of power with which to operate a large flour mill is to be constructed at Cadiz, Ky., by A. P. White & Co. A reinforced concrete dam is now being built.

The Citizens Light & Power Co., Sacramento, Cal., will soon incorporate with George W. Peltier as president. It is planning to erect a power plant. The capital of the company will be $5,000,000.

The citizens of Hamilton, Ont., have adopted a by-law to raise $505,160 for a municipal plant to distribute electric power to be supplied from Niagara Falls by the provincial hydro-electric commission.

The Birmingham Water, Light & Power Co., North Birmingham, Ala., is in the market for six generators and turbines, and will install them on Warrior river. T. H. Friel is president of the company.

Bids are being taken by the borough clerk of Etna, Pa., for the erection of a brick and steel power building, 34 x 85 feet, plans for which were prepared by J. R. Kramer, engineer, House building, Pittsburg.

The Olean Electric Light & Power Co., Olean, N. Y., has a petition before the public service commission for permission to issue $185,000 in bonds. If granted, the proceeds of the sale will be used, in part, for the erection of a power plant.

The Louisville branch of the Omaha Packing Co. is to be enlarged by the erection of an addition. A 30-horsepower boiler is included in the list of equipment which is to be purchased. The contract will be let from the Chicago offices of the company.

Greenville, Tenn., plans to develop the water power of Nolachucky river, and is having surveys made to that end. A pumping station for a water system is also to be constructed. The town will probably issue bonds for the purpose of making the improvements.

Announcement is made that one million dollars will be spent by the Columbus, Ga., Electric Co. in extending and enlarging its plant. Hydro-electric power will be generated on the Chattahoochee river, and a power house and transmission lines will be constructed.

Proposals for the construction of a power house at the Pennsylvania State hospital for the criminally insane, which is to be built at Farview, Pa., will be received until Aug. 8. Drawings and specifications may be had on application at the office of C. M. Shirk, architect, Philadelphia Bank building, Philadelphia.

The Long Acre Electric Light & Power Co., 165 Broadway, New York, has been granted permission by the public service commission to issue $50,000,000 in bonds. The grant provides that for each $1,000,000 face value of stock that has been paid for $2,000,000 in bonds may be offered for sale, and that the proceeds shall be devoted to extensions and improvements of the company's system.

Plans have been filed at the building department, New York city, for the group of buildings which will comprise the Montefiore Home. Seven isolated sanitarium and hospital buildings, and an administration building of reinforced concrete, with necessary power and heating adjuncts will be erected at a cost of $1,000,000. Buchman & Fox, 11 East Fifty-ninth street, prepared the plans. It is reported that work will be started during August.

Miscellaneous

The Mesta Machine Co., West Homestead, Pa., is building a seven-spindle bar twisting machine for the Southern Iron & Steel Co., Gadsden, Ala., which is preparing plans for the manufacture of reinforcing twisted bars. The machine, which is similar to the one built for the Inland Steel Co., will be driven by a 75-horsepower motor and will twist seven bars at a time. It is expected that shipment will be made the latter part of August.

The Newark, N. J., board of esti-

mates has voted an appropriation of $300,000 to the board of education and it is expected that awards on the list of machine tools submitted to dealers some weeks ago will not be delayed much longer.

The Mesta Machine Co., last week, shipped to the American Rolling Mill Co., Middletown, O., a large reversing engine and a No. 6½ lever shear; a gas engine to Wickwire Bros., New York; a gear drive to the Fulton Iron Works, St. Louis; a 57-inch high speed condenser and a 12 and 34 x 16-inch dry air pump to the Lackawanna Steel Co., Buffalo; a 72-inch high speed condenser and a 12 and 30 x 31-inch dry air pump to the Portsmouth Steel Co., Portsmouth, O.; a large cut gear, 17 feet 9 inches in diameter with 30-inch face and a pinion 8 feet 9 inches in diameter with 30-inch face to the American Sheet & Tin Plate Co., Chester, W. Va.

Government News

On August 1, the commanding officer of Frankford arsenal, Philadelphia, Pa., will open bids under proposal No. 15, for furnishing 5,000 pounds of bar steel in 10-foot lengths, dead soft, annealed, straight round, and free from scale. For further information address the commanding officer, Frankford arsenal.

Bids will be opened by the supervising architect, Treasury department, Washington, D. C., at 3 p. m. on Aug. 1, for furnishing lamp standards for various public buildings. For further information address the supervising architect, Treasury.

Isthmian Canal Bids.

Bids will be opened by the Isthmian canal commission, Washington, D. C., at 10:30 a. m. on Aug. 21, under circular No. 641, for furnishing 55 crucibles for Steel-Harvey brass melting furnaces and 36 driving wheel locomotive tires. For further information apply to the purchasing officer of the commission at Washington.

The following requisitions have been received from the Isthmus by the purchasing officer of the canal commission, at Washington and an official advertisement calling for bids will be issued in a few days:

Two hundred forty plate girders, 45 feet long, for the Gatum locks.

Eight driving locomotive springs.

Six sets engine truck springs.

Twelve tender truck springs.

One hundred fifty sets car truck springs.

Fifty sets drawer bar springs.

Ten dipper tips.

Four yards manganese steel castings.

Two hundred tips to fit shanks, manganese steel castings.

The Isthmian canal commission, Washington, D. C., will open bids on Aug. 1, for furnishing 3,000 bolts, ¾ x 8 inches hexagon heads and nuts, and 26,300 bolts without nuts; threaded 2¼ inches. For further information address the purchasing officer of the Isthmian Canal commission, at Washington.

Naval Supplies.

Bids will be opened Aug. 1, by the bureau of supplies and accounts navy department, Washington, D. C., for furnishing and delivering at various navy yards supplies:

Blowers, forced draft, 14, Brooklyn, 3800.
Brick, red shale, 160,000, Philadelphia, 3808.
Tubing, copper, 400 feet, Norfolk, 3818.
Cable, steel wire, copper clad, 80,000 feet, Brooklyn, 3815.
Blocks, chain, worm geared, 16, Brooklyn, 3818.
Bolts and nuts, steel, 2,800 pounds, Brooklyn, 3814.
Bolts and nuts, steel, miscellaneous, Boston, 3818.
Forges, blacksmith, 15, Brooklyn, 3814.
Hardware, miscellaneous, Norfolk, 3814.
Shovels, scoop and coaling, miscellaneous, Boston, 3818.
Bronze, rod, 2,800 pounds, Norfolk, 3812.
Plates, armor, miscellaneous, f. o. b. works, 3809.
Solder, half and half, 3,000 pounds, Norfolk, 3812.
Steel, bar, 4,340 pounds, Brooklyn, 3812.
Steel, beam, 19,000 pounds, Newport, 3810.
Steel, plate, boiler, 38,700 pounds, Washington, 3809.
Zinc, sheet, rolled, 3,000 pounds, Norfolk, 3818.
Fittings, pipe, iron, miscellaneous, Norfolk, 3817.
Valves, gate, 60, Norfolk, 3817.
Valves, composition, miscellaneous, Norfolk, 3817.
Valves, composition, 66, Boston, 3817.

August 22.

Engine, gasoline, 1, Brooklyn, 3807.
Extending pneumatic tube system, Brooklyn, 3804.
Machine, cuting off, 1, Boston, 3806.

September 5.

Drills, sensitive, 1, Mare Island, 3803.
Grinder, emery, 1, Mare Island, 3803.
Lathe, Gap, 1, Mare Island, 3803.
Lathe, tool-room, 1, Mare Island, 3803.
Machine, shaping, 1, Mare Island, 3803.
Press arbor, 1, Mare Island, 3803.
Press, drill, 1, Mare Island, 3803.

Bids Opened.

The following bids were opened July 25. at the bureau of supplies and accounts, navy department, Washington, D. C. for furnishing material and supplies for various navy yards:

SAND MIXING MACHINE. — Schedule 3748, Class 21, Norfolk, 1 centrifugal sand mixing machine: Federal Foundry & Supply Co., Cleveland, $425 and $325; Manning, Maxwell & Moore, New York, $164 and $174; J. W. Paxson & Co., Philadelphia, $380. Wm. Sellers Co., Philadelphia, $380.

SAND SHAKERS.—Schedule 3748, Class 22, Norfolk, 3 small pneumatic tripod sand shakers: Federal Foundry & Supply Co., Cleveland, $60; Hanna Engineering Works, Chicago, $60.75; International Steam Pump Co., New York, $62.50; Manning, Maxwell & Moore, New York, $58.50; S. Obermayer Co., Cincinnati, $60; Drew Machinery Agency, New York, $60.

HOISTS.—Schedule 3765, Class 45, Brooklyn, 6 spur-geared chain hoists and 12 chain blocks: F. S. Banks & Co., New York, $204.24; R. W. Geldart, New York, $209.70; J. B. Kendall Co., Washington, $203.70; E. F. Kirwan & Co., Baltimore, $360; Manning, Maxwell & Moore, New York, $193.44. Montgomery & Co., New York, $99.90; Manhattan Supply Co., New York, $218.76; N. J. Foundry & Machine Co., New York, $319.20; Vermilye & Power, New York, $211.20; Yale & Towne Mfg. Co., New York, $336.

Canal Supplies.

Bids were opened at the office of the Isthmian canal commission on July 24 as follows:

STEEL CARS.—Circular 637, Class 1, 18 all steel flat cars: Atlas Car & Mfg. Co., Cleveland, $12,510 or $8,712, 90 days; Kennicott Co., Chicago, $13,500, 60 days; Kilborn & Jacobs Mfg. Co., Columbus, O., $10,494, 100 days; Magor Car Co., New York City, $10,080, 65 days; James Motley, New York, $11,250, 130 days; Orenstein-Arthur Koppel Co., New York, $10,080, 85 days, or $6,264; William J. Oliver, Knoxville, Tenn., $13,014, 65 days.

KEYS AND COUPLER KNUCKLE PINS. —Circular 637, Class 2, 3,000 brake shoe keys and 10,000 coupler knuckle pins: American Car & Fdy. Co., New York, Item 3 only, $2,000 or $1,900, 33 days; Ed. Dietrick, Henryville, Ind., $3,085, 80 days; Oliver Iron & Steel Co., Pittsburg, $1,631, 40 days; Pittsburg Forge & Iron Co., Item 3 only, $1,650 or $1,725, 40 days; Western Tool & Forge Co., Brackenridge, Pa., $2,117.50, 60 days; Steel Car Forge Co., Washington, D. C., $1,857.50, 50 days.

MALLEABLE CASTINGS.—Circular 637, Class 3, malleable castings: Fort Pitt Malleable Iron Co., Pittsburg, $5,380.75, 90 days, or $0.325 per pound; R. C. Hoffman & Co., Baltimore, $5,546.69, 65 days; Northwestern Malleable Iron Co., Milwaukee, $6,043.41, 60 days; Ross Meehan Foundry Co., Chattanooga, Tenn., $5,497.04; American Malleable Co., Lancaster, N. Y., $5,463.93, 90 days; William J. Oliver Mfg. Co., Knoxville, Tenn., Items 14 to 20, $6,196, 90 days.

SPILLWAY GATES.—Circular 636, Class 1, spillway gates and steel caissons: McClintic-Marshall Construction Co., Pittsburg, $102,930, 150, 420 and 180 days; United States Steel Products Co., New York, $107,637, 250, 400 and 350 days.

GATE VALVES.—Circular 636, Class 2, stem rising gate valves, etc.: McClintic-Marshall Construction Co., Pittsburg, $236,260, 150 days, 7 months, 150 days, 40 days; William Tod Co., Youngstown, O., $380,940, 180 days 1 month, 150 days and 750 days, or $330,370.

REINFORCING MATERIAL. — Circular 636, Class 3, reinforcing material: Contractors Casting & Machine Co., Buffalo, $32,484.84, four in 69 days and four each month; Excelsior Tool & Machine Co., E. St. Louis, Ill., $23,722.33, four sets in 45 days and four each month; Fawcus Machine Co., Pittsburg, $44,840, four in 85 days and two each month; Marshall Foundry Co., Pittsburg, 4.9c, 3.85c and 5.67c per pound, part bid; New Jersey Foundry & Machine Co., New York, $34,935.19, four sets in 90 days and four per month; Union Foundry & Machine Co., Pittsburg, $43,373.82, four in 60 days and four each month; United Engineering & Foundry Co., Pittsburg, $31,172.23, four in 140 days and four or five each month; Lynchburg Foundry Co., Lynchburg, Va., $63,333, four in 90 days and three each month; William Tod Co., Youngstown, O., $49,913.05, 120 days and two each month; Westinghouse Machine Co., East Pittsburg, Pa., $45,852, four in 90 days and four each month.

STEEL BOLTS.—Circular 636, Class 4, cast steel, tool steel and steel bolts: Fawcus Machine Co., Pittsburg, $219,612.59, 770 days; William Tod Co., Youngstown, O., $159,488.22, 750 days; Westinghouse Machine Co., East Pittsburg, Pa., $158,896.30, 425 days, or 26c on 20, 21, 22, 32, 33 and 34.

RAILWAY MATERIAL. — Circular 636, Class 5, material required for railways of the spillway dam: Baltimore Bridge Co., Baltimore, $6,329, 150 days; New Jersey Foundry & Machine Co., New York, $6,987, 180 days; Union Foundry & Machine Co., Pittsburg, $19,913.80, eight months, or $11,554.62, eight months; Vulcan Rail & Construction Co., Brooklyn, N. Y., $5,665, 90 days.

(In order to assist the post office in delivering letters to new concerns, it is suggested that the names of incorporators be written in the lower left hand part of every envelope addressed to such new companies.)

New Buyers

The following manufacturing concerns have taken out articles of incorporation:

The Guilford Foundry Co., Greensboro, N. C.; $25,000; by George F. Newman, W. W. Smith and W. A. Cooke.

Dominion Bolt & Screw Co., Ltd., Toronto; $400,000; by Thomas A. Wilson, John T. Loftus, John A. Nilne and others.

The Metal Process Co., Cleveland; $10,000; by J. T. Fagin, W. G. McKitterick, D. W. Daily, J. R. Massey and J. E. Kewley.

The International Foundry Co., Ltd., London, Ont.; $75,000; by Chas. H. Mitchell, Alex H. Gauld, N. W. Calcott and others.

Noon Universal Coupler Co., Ltd., Toronto; $100,000; by Melvin G. Hunt, Carleton S. Warner, Hugh J. Macdonald and J. J. Noon.

Brantford Motor Truck Co., Ltd., Brantford, Ont.; $100,000; by Arthur K. Bunnell, Edward L. Goold, Thomas E. Ryerson and others.

Cleveland & Erie Machinery Co., Cleveland; $10,000; by G. H. Williams, William Ruddock, C. C. Williams, E. P. Lord and S. C. Edwards.

The Preston Woodworking Machinery Co., Ltd., Preston, Can.; $100,000; by Michael H. Mullin, Wm. J. Murray and Allan N. Kerr.

The Stevens Mfg. & Foundry Co., Decatur, Ill.; $75,000; general manufacturing; by Samuel J. Diets, Chas. W. Diets and Williard C. Rowe.

S. F. K. Steel Barrel Co., Cleveland; $10,000; by Charles F. Schriner, J. Merle Finney, Robert H. Kelly, Robert D. Morgan and John A. Nally.

The Turner & Moore Mfg. Co., Detroit; $25,000; to manufacture jigs, tools and special machinery; by Wm. F. Turner, W. C. Moore and J. H. James.

The Bray & Kates Co., Arlington Heights, Ill.; $50,000; to manufacture and deal in metal products; by Richard Bray, Fred E. Coyne and Wallace E. Shira.

The Henson Mfg. Co., Springfield, O.; $10,000; to manufacture patented machines for railroad usages; by O. R. Henson, F. E. Townsend and C. C. Florida.

The Johnson Bearing Co., Detroit; $100,000; to manufacture and deal in bearings, auto parts, engines and dynamos; by Charles O. Johnson and Hugh T. Wilson.

Excelsior Iron & Metal Co., Jersey City, N. J.; $10,000; to deal in iron, steel, lead and zinc metals, etc.; by Sol London, Harry E. Salzberg and Joseph Goldman.

Canadian Hanson & Van Winkle Co., Ltd., Toronto; $100,000; to manufacture electrical appliances; Chas. H. C. Leggott, Jessie Shachan, Geo. W. Clark and others.

The Laidlaw Baletie Co., Ltd., Hamilton, Ont.; $400,000; to manufacture iron and steel products; Wm. A. Laidlaw, Edwin Hodson, Ralph G. Laidlaw and others.

The Holmes & Morris Mfg. Co., Syracuse, N. Y.; $25,000; to manufacture die casting machinery and specialties; F. H. Holmes, H. C. Morris and J. J. Collins.

Bowes, Jamieson, Ltd., Hamilton, Ont.; $100,000; to carry on a foundry and machine shop business; by James Jamieson, James R. Jamieson, John W. Jamieson and others.

Forse Mfg. Co., Pendleton, Ind.; $25,000; to manufacture automobile accessories; by W. H. Forse Jr., R. M. Allen, Linfield Myers, Fred Lantz, D. B. Cole and Austin Retherford.

The Equipment & Improvement Co., Cleveland; $5,000; to manufacture railroad rolling stock; by Albert Waycott, H. Hughes Johnson, T. J. Moffet, Edith C. Hoag and L. T. Smythe.

Locomotive Economy Co., Manhattan, New York City; $20,000; to manufacture and deal in railroad appliances; by Louis N. Vause, 128 Willoughby avenue, Brooklyn; L. C. Nathan, 15 W. 177th street, New York, and Edmond Powers, 15 Broad street, New York.

Bijur Motor Lighting Co., Manhattan, New York; $375,000; to manufacture electric and lighting apparatus for autos; to manufacture and deal in automobile supplies, etc.; by George H. Engelhard, 17 E. Ninety-seventh street, New York City; Chester E. Mann, 20 Conklin avenue, Brooklyn, and Marian I. Dempsey, 28 St. Nish place, New York City.

Oil Power Co., Manhattan, New York City; $100,000; to manufacture oil and other engines; by Leon Wygodsky, 2103 Crotona avenue; Frederick L. C. Keating, 114 Liberty street; Geo. W. Bunnell, 43 Exchange place, all of New York City, and John B. Parsons, Mariners Harbor, N. Y., and Wm. F. Turner Jr., 129 Arlington avenue, Jersey City, N. J.

New Construction

The R. M. Eddy Foundry Co., Chicago, has taken out a permit to build a two-story brick foundry addition to its plant, to cost in the neighborhood of $4,000.

The Eagle Mfg. Co., Muskogee, Okla., which was recently incorporated to manufacture agricultural implements, will erect a new building, 192 x 435 feet, the construction of which will be of concrete and brick. New machinery has been purchased at a cost of $100,000.

The Gisholt Machine Co., of Madison, Wis., has commenced the erection of an addition to its plant, which with a new office building to be erected, will mean the expenditure of $150,000. The addition will be 325 feet long, of brick construction with terra cotta trimmings and saw-tooth roof.

The South Texas Mortgage Co., South Houston, Tex., has completed arrangements with Hahn & Smith, of that place, for the erection of a new foundry to manufacture castings of steel, brass and aluminum. The plant will contain three large furnaces, one for brass, one for steel and one for aluminum castings.

The Crucible Steel Co. of America is planning the erection of two additional buildings to its plant at Harrison, N. J. One of these will be 61 x 260 feet in dimensions for the press department, and the other, 54 x 240 feet for the treatment department. Both will be of steel construction and will cost about $25,000.

The Rockford Milling Machine Co., Rockford, Ill., manufacturer of milling machines, is building a new factory building at the corner of Harrison and

Eleventh streets. The building will be a one-story, brick, fireproof structure, 80 x 100 feet. It is expected that it will be ready for occupancy about Oct. 1. The company advises that it is in the market for considerable shafting, belting and pulleys and will also need some motors and grinders.

The Dominion Iron & Steel Co., Sydney, N. S., has contracted for the building and operation of a new wire mill at its Sydney plant to cost not less than $1,500,000, with a capacity of 400 tons of finished products a day including nails, barbed wire, woven wire and poultry netting. The construction of the new mill will be under the supervision of Earl B. Doughlas, a wire manufacturing expert, of Allentown, Pa., and he has left for Canada to begin the work. It is also stated that the Sydney plant is to be further enlarged, and besides the wire mill, a large rail mill, a coke plant, open-hearth furnaces, and the development of ore and coal lands will be added.

L. G. Fiscus, of Apollo, Pa., advises that the Apollo Sheet & Tin Plate Mfg. Co. will build an open-hearth steel plant, blooming mill and eight sheet and tin mills at Apollo, and later will build plants at Kittanning and Leechburg, Pa. Business men of Apollo have donated nine acres which is a part of the old Apollo Foundry Co.'s site. A 20-acre site has been provided by business men at Kittanning, and Leechburg has also given a site for a plant at that place. C. H. Burgham, of Canton, O., will be general manager of the proposed new plant. In addition to Mr. Fiscus and Mr. Burgham, M. G. O'Brien of Mansfield, O., head of the Royal Rubber Co., of Akron, O., and others are interested in the new project.

General Industrial

The Electric Controller & Mfg. Co., Cleveland, has completed a new shop which will be used for manufacturing automatic motor starters. The company expects to make stock shipments of these starters very shortly.

The Star Disc Machine Co., Kansas City, Mo., the incorporation of which was recently noted, has begun to equip its plant and has purchased machinery including a planer, a lathe and a milling machine.

The general contract for the proposed new 8-story hotel building to be erected at Erie, Pa., by the Erie Hotel Co., has been awarded to the Henry Shenke Co., Erie. The contract for the steel has not yet been awarded.

Claiming that the firm is insolvent, creditors of the General Compressed Air & Vacuum Machinery Co., St. Louis, have filed an involuntary petition of bankruptcy against that company in the United States district court.

The Palm Iron & Bridge Works has been awarded the contract for furnishing 192 tons of steel for the new D. O. Mills bank at Sacramento, Cal., the price being $12,140. The York Safe & Lock Co. secured the contract for steel vaults in the sum of $32,125.

The Iowa Mfg. Co., Oskaloosa, Ia., which failed some time ago, has been re-organized and the plant is now being operated by the Iowa Valve Co. Herman W. Read is secretary and treasurer. This company runs a foundry, manufacturing heavy gate valves and fire hydrants.

The chamber of commerce of Huntington, W. Va., advises that it is in the market for a street sign standard, something suitable to which to attach signs bearing names of streets and avenues. The secretary is H. E. Mathews, room 502, Vinson-Thompson building, Huntington.

William S. Yohe, 228 E. 7th street, Canton, O., announces that he has retired as secretary of the Canton Foundry & Machine Co., and has purchased the company's entire supply department, but still retains a large interest in the factory. He desires to receive catalogs and circulars containing the best dealer's prices.

After a complete financial reorganization with $25,000 capitalization, the Chattanooga Iron & Wire Works, Chattanooga, Tenn., has been dismissed from the courts and is again in business. The new officers of the company are: President and treasurer, T. C. Green; secretary, J. E. Morelock, and sales manager, R. C. Lieb.

The Southern Saw Works, Atlanta, Ga., has purchased the American Machinery Co., also of Atlanta, and will operate under the new title of the Southern Saw & Machinery Works. The plant of the company is at East Point, Ga., and it manufactures saws, woodworking machinery, iron working machinery, gasoline and steam engines, etc.

J. A. Sidey, of San Francisco, has been appointed trustee for the insolvent Henshaw Bulkley Machinery Co., of that place, by the reefree in bankruptcy. A preliminary report shows that the defunct concern has property valued at about $20,000. The original schedule of assets showed $400,000, but this included insurance policies, etc. The liabilities are $429,967.

The American Rotary Valve Co., Chicago, has appointed T. G. Winters superintendent of its branch plant at Anderson, Ind., which was formerly the Jenney Electric Co. Mr. Winters had previously been connected with the Jenney company, having served as president and general manager of the old concern for the past eight years. The new branch will be used simply as a producing concern as all of the executive business will be done in Chicago.

The Southern Brass Mfg. & Plating Co., Houston, Tex., which recently doubled its capital, is now contracting for equipment necessary for a large brass foundry and machine and plating shops. For the present the company will occupy a building at 517 Louisiana street, that city. The officers are: President, W. S. Farish; vice president and general manager, Thomas White; second vice president, W. W. Fondren; secretary and treasurer, G. C. Staiti; directors, Thomas Adams and L. T. Hubbell. L. M. Rumsey, of St. Louis, has been appointed superintendent.

Trade Notes

The C. M. Neeld Construction Co. has opened offices at 1418 Oliver building, Pittsburg. The company was formed by C. M. Neeld, formerly general manager of the Rankin works of the McClintic-Marshall Construction Co.

E. C. Sherwood, formerly New York manager for Hyde Bros. & Co., Pittsburg, has opened an office in the Hudson building, New York. He will handle steel rails, track supplies and a complete line of railway and contractors' equipment.

The American Steam Gage & Valve Mfg. Co. announces that its vice president, Gardner Cornett, will hereafter be permanently located at the company's offices, 30 Church street, New York. The office continues under the management of Charles A. Allen, who has been connected with the company for many years.

Fires

The boiler and power house of the Schoen Steel Wheel Co.'s plant, Stowe township, Pa., were damaged by fire July 22, the loss being $20,000.

A fire, which is believed to have originated from an overheated furnace in the boiler room of the Wisconsin Iron & Wire Co., Milwaukee, Wis., on July 21, spread through the northern end of the plant, causing a loss of about $15,000.